

# CA JOURNAL

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AVIATION INFORMATION

## Personal Aircraft Needs Cited by Wright in London

The immediate need in personal aircraft is for additional utility of the vehicle itself, which includes not only performance characteristics but also reductions in initial and operating costs, T. P. Wright, Administrator of Civil Aeronautics, declared in an address presented at the Anglo-American Conference, under the joint auspices of the Royal Aeronautical Society and the Institute of Aeronautical Sciences, in London, England, on September 6.

**Stresses Utility Need.**—Discussing his topic, Personal Aircraft—An American Appraisal, from economic, engineering, transportation, practical and pleasure viewpoints, Mr. Wright said that with added utility, a benevolent spiral of increased production and reduced price will result. And assuming that the basic desire for flying is present in a very large number of people who can afford the cost, it appears that this spiral will result in a desire to spend which will in turn give new importance to the field of personal aircraft.

To attain success in the personal aircraft field, Mr. Wright pointed out that we must consider an aircraft which will meet the needs of the family, paralleling the experience with automobiles where the earlier predominance of two-place cars gradually made way for the larger machines of today, which decidedly dominate the market.

In answer to the rhetorical question of why we in America are now attaching such importance to the personal aircraft field, Mr. Wright briefly discussed the potential markets for big air transports, short-haul or feeder-line aircraft, aircraft performing services of a commercial nature other than transportation of passengers and goods, aircraft for executives' transportation and then declared:

**Most Important Factor.**—"However, when the market for all of the above types of planes is grouped it is still apparent that what may be termed a really large industry, and one having an important effect on national economy, will not be provided. Of course, the market for military aircraft will for a long time, I fear, represent possibly the most important field in aircraft development and manufacture. However, even considering this with the others, it can readily be seen that, developed to an adequate extent, the personal aircraft can easily become the most important factor in the aircraft industry. Used both for business and pleasure it is here only that an almost limitless potential market is available. The industries necessary to satisfy such a market, both in pro-

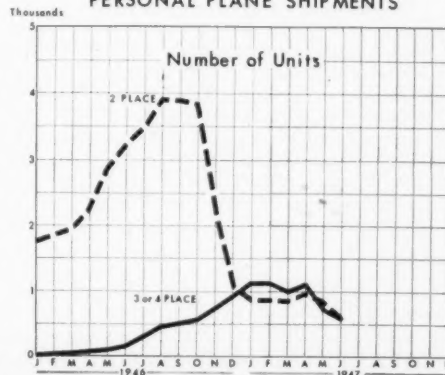
ducing and servicing the aircraft involved, will be of major importance in the general economy of a nation.

"In my Wilbur Wright Lecture in May 1945, I ventured a forecast that by 1955, or thereabouts, there would be 400,000 registered civil aircraft in the United States, with an annual production at that time of personal aircraft of the order of 150,000. I see no reason two years later to change this long-range estimate.

"At that time I submitted a four-point program necessary in order to assure the attainment of these figures. This included an expansion of the airport system; a re-appraisal of regulatory requirements; institution of educational and training aids; and an acceleration in the technical development of the personal aircraft itself. Satisfactory progress is being made in the first three items, as indicated by the start we have made in a national airport program; in rationalization of regulations pertaining to the private pilot and the personal aircraft; and the institution of

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PERSONAL PLANE SHIPMENTS



## ILS Use Assures More Regularity In Air Schedules

More regularity of airline schedules by way of lowered operation minimums is assured for this winter through the use of the instrument landing system, T. P. Wright, Administrator of Civil Aeronautics, stated in a recent announcement. Greater safety also is assured in landings at 30 terminal airports now equipped for instrument landing procedures.

**Five Airlines Approved.**—Five airlines now are approved for use of these facilities. The lowered minimums authorize 300-foot ceilings and three-quarters of a mile visibility. At some of the 30 cities higher minimums are required, owing to obstructions around the airport, or to neighboring hills or mountains which have to be considered in connection with every type of instrument approach system.

Of the five airlines, American Airlines will use the system at 15 fields; Braniff Airlines at 10; Continental Airlines at 8; Chicago and Southern Airlines at 8; and Delta Airlines at 7. A sixth major airline is expected to be finally approved for 7 fields in the near future and applications are being received almost daily at CAA regional offices from others.

To date 50 instrument landing systems are commissioned. Fourteen others are in advanced stages of installation, making a total of 64 which will be available for airline use by November 1.

The airlines approved for instrument landings and the approved fields they serve follow:

**American**—Chicago, Ill.; Cincinnati, Ohio; Dallas, Tex.; Dayton, Ohio; Fort Worth, Tex.; El Paso, Tex.; Indianapolis, Ind.; Memphis, Tenn.; Newark, N. J.; New York (La Guardia); Oklahoma City, Okla.; Knoxville, Tenn.; Washington, D. C.; Austin, Tex.; and Tulsa, Okla.

**Braniff**—Amarillo, Tex.; Brownsville, Tex.; Chicago, Ill.; Dallas, Tex.; Denver, Colo.; Houston, Tex.; Oklahoma City, Okla.; San Antonio, Tex.; Wichita, Kans.; and Fort Worth, Tex.

**Delta**—Atlanta, Ga.; Cincinnati, Ohio; Dayton, Ohio; Indianapolis, Ind.; Jacksonville, Fla.; Knoxville, Tenn.; and New Orleans, La.

**Continental**—Albuquerque, N. Mex.; Cheyenne, Wyo.; Denver, Colo.; El Paso, Tex.; Oklahoma City, Okla.; San Antonio, Tex.; Tulsa, Okla.; and Wichita.

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# CAB Announces Decision in Great Lakes Area Regional Service Case

The Civil Aeronautics Board on September 8 announced its decision in the Great Lakes Area regional air service case, in which it selected two feeder lines, authorized a new experimental intra-city helicopter service, and amended the certificates of four presently scheduled air carriers so that additional cities in the Great Lakes Area will receive air service.

The Board said that the new and additional air service will provide effective and appropriate long-haul and local-feeder transportation service within the Great Lakes Area which is east of Indianapolis and which also includes Ohio. Although no feeder line was selected to provide service within Ohio, the certificates of TWA were amended so as to provide that State with an extensive local-type service.

**Fills Individual Needs.**—The Board stated that "we have considered the need for air service not only on a general or area basis, but we have gone further and examined the special needs of individual cities. This review of the evidence has disclosed that in many instances the public convenience and necessity will be better served by including certain cities on the routes of existing carriers rather than by creating entirely new local service systems. While the establishment of such new systems might in some instances answer the requirements of local service, they would not, in our opinion, add in the over-all development of a sound national air transportation pattern. Thus, in considering the proposals of the various applicants, we have in a number of cases authorized existing carriers to perform needed services to cities that are now uncertificated, in the belief that such authority will provide the maximum of service commensurate with sound air transportation principles."

**Feeder Line Routes.**—The feeder airlines selected by the Board are the Parks Air Transport, Inc.; and the Roscoe Turner Aeronautical Corp.

A temporary certificate of public convenience and necessity was awarded Parks Air Transport, Inc., to be issued after further appropriate showing as to the adequacy of airport facilities, authorizing the transportation of persons, property and mail for a period of 3 years from the date of issuance, provided the carrier obtains the Board's approval of its relationship with Parks Air College and its affiliated companies (a) between the terminal point Rockford, Ill., the intermediate points La Salle-Ottawa, Peoria, and Springfield, Ill., and the coterminal points St. Louis, Mo., and East St. Louis, Ill.; (b) between the terminal point Galesburg, Ill., and the intermediate points Peoria, Bloomington, Champaign-Urbana, and Danville, Ill., and Crawfordville, Ind., and the terminal point Indianapolis, Ind.; and (c) between the terminal point Indianapolis, Ind., the intermediate points Crawfordville, Ind., Danville, Champaign-Urbana, Decatur, and Springfield, Ill., and the coterminal points St. Louis, Mo., and East St. Louis, Ill. The Board had previously selected Parks to engage in air transportation in the North Central Case.

The Board also awarded a temporary certificate of public convenience and necessity to the Roscoe Turner Aeronautical Corp., also to be issued after further appropriate showing as to the adequacy of airport facilities, authorizing transportation of persons, property and mail for a period of three years from the date of issuance: (a) between the terminal point Grand Rapids, Mich., the intermediate points Kalamazoo, Mich., South Bend, Logansport, Kokomo, Indianapolis, and Connersville, Ind., and the terminal point Cincinnati, Ohio; and (b) between the terminal point Chicago, Ill., the intermediate points Kankakee, Ill., La Fayette, Indianapolis, Bloomington, and Bedford, Ind., and the terminal point Louisville, Ky.

**Helicopter Passenger Service.**—A new experimental intra-city helicopter service, the first such operation authorized by the Board to carry passengers,

will be operated by the Yellow Cab Co. of Cleveland.

The Yellow Cab Co. was authorized to engage immediately in air transportation of persons and property by helicopter for a period of 3 years: (a) between the terminal point, Cleveland Municipal Airport, and a terminal point in downtown Cleveland, Ohio, and (b) between the terminal point, Cleveland Municipal Airport, the intermediate point Shaker Square, and the terminal point, Euclid, Ohio.

The four scheduled air carriers whose certificates of public convenience and necessity were amended by the Board to provide additional air service in the Great Lakes Area are: Chicago and Southern Air Lines, Delta Air Lines, Transcontinental and Western Air, and United Air Lines.

Chicago and Southern's certificate for route 8 was amended to extend from the intermediate point Evansville, Ind., to the terminal point Chicago, Ill., via the intermediate point Terre Haute, Ind.

Delta's certificate for route 54 was amended to include Richmond and Kokomo, Ind., as intermediate points for a period of 3 years.

TWA's certificate for route 2 was amended so that the Indianapolis-Dayton segment shall extend from Dayton to Cleveland, Ohio, with authority to serve Springfield, Marion, and Mansfield, Ohio, as intermediate points for a period of 3 years; and to allow the carrier to operate nonstop service between Indianapolis, Ind., and Cleveland, Ohio.

**Local Service to TWA.**—TWA's certificate for route 2 was also amended to include Richmond, Ind., to be served for a period of 3 years, as an intermediate point between Indianapolis, Ind., and Cincinnati, Ohio; Springfield, Ohio, to be served for a period of 3 years, as an intermediate point between Dayton and Columbus, Ohio; Zanesville, Ohio, to be served for a period of 3 years, as an intermediate point between Columbus, Ohio, and Pittsburgh, Pa.; and Fort Wayne, Ind., Lima, Marion, and Mansfield, Ohio, as intermediate points, for a 3-year period, on the Peoria-Chicago-Pittsburgh segment, subject to the restriction that (a) Chicago and Cleveland and (b) Fort Wayne and Cleveland shall not be served by the same flights.

TWA's certificate for route 58 was amended so that there shall be two Dayton-Toledo segments, one including (for a 3-year period) the intermediate points Lima and Findlay, Ohio, and the other including the intermediate points Columbus and Marion, Ohio, the latter point to be served for a period of 3 years, subject to the restriction that Chicago and Toledo may not be served by the same flight unless a stop is made at Dayton.

United Air Lines' certificate for route 1 was amended to include Sandusky, Ohio, to be served for a period of 3 years, and Fort Wayne, Ind., as intermediate points, subject to the restriction that Fort Wayne shall not be served on flights serving Toledo or Detroit.

## Alison Named to NACA

John R. Alison, new Assistant Secretary of Commerce for Aeronautics, has been appointed by President Truman to the National Advisory Committee for Aeronautics. Mr. Alison, whose appointment was announced on August 29, replaces William A. M. Burden as a member of the NACA, concurrent with his succession to Mr. Burden as Assistant Secretary of Commerce for Aeronautics.

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## New Rules Adopted For Moored Balloons

With moored balloons now being operated in sufficient numbers to constitute a potential air hazard, regulations restricting the operation of certain sizes of such craft have been issued, effective September 28.

A new Part 48 amending the Civil Air Regulations governs the operation of a moored balloon having a diameter of more than 6 feet or a gas capacity of more than 115 cubic feet. Balloons of smaller sizes than specified are exempt from the regulations.

A permit must be obtained from the CAA when moored balloons of the specified sizes are operated as follows: (1) closer than 500 feet to the base of any cloud; (2) during the hours of darkness; (3) when ground visibility is less than 3 miles; (4) at altitudes more than 500 feet above the ground; (5) within 5 miles of the boundary of an airport.

They may be operated without permit or notice if less than 150 feet above the surface at a location more than 5 miles from the boundary of an airport. If the balloon is to operate between 150 and 500 feet above the surface at such a location, a permit is not necessary, but written notice must be submitted to the nearest CAA office at least 30 days prior to the date of operation.

The regulations state that no moored balloon of the size or gas capacity outlined shall be operated unless equipped with a means of automatic and rapid deflation in case of an escape from its moorings.

## Western May Transfer Route 68 To United Airlines, CAB Decides

The Civil Aeronautics Board in a recent decision approved the transfer of the property and business of route 68, running from Los Angeles to Denver, from Western Airlines to United Air Lines in consideration of a payment by United Air Lines of \$3,750,000.

The Board conditioned its approval upon the requirement that United should immediately charge to its surplus account the difference between the total purchase price and the original cost to Western Airlines of all property transferred, both tangible and intangible, less depreciation on the books of Western Airlines at the time of transfer. The Board also conditioned the transfer upon a restriction prohibiting United Air Lines from engaging in local air transportation between Los Angeles, Calif., and Las Vegas, Nev.



# Skyway One Initiators Commended; Civil Aviation Discussed by Alison

Commending the Los Angeles Chamber of Commerce and the Washington Board of Trade for bringing Skyway No. 1 into being, Mr. John R. Alison, Assistant Secretary of Commerce for Aeronautics, declared that their initiative will present a challenge which he hopes will be taken up by air-minded groups in all parts of the country.

Mr. Alison, in his address before the survey party of the Washington-Los Angeles Skyway One and the Washington Board of Trade, at the Washington National Airport, September 12, extended a hearty welcome and his congratulations to the party flying the initial survey of the skyway route.

**Boost for Personal Flying.**—"The support given to the Los Angeles idea by Washington and by the cities along the route," Mr. Alison said, "is an indication of what can be done when private American citizens make up their minds that they really want something and then put their shoulders to the wheel. Here a group of people have gone out and done something to give personal flying a helpful boost."

Fostering and advancing personal flying, Mr. Alison said, has long been the concern of Mr. William Burden, former Assistant Secretary of Commerce, Mr. T. P. Wright, Administrator of Civil Aeronautics, and those associated with him in the CAA. The personal plane must be brought to a stage where it will be a major contributor to our national economy and to the happiness and convenience of the American people.

"One of the important factors in bringing this about," Mr. Alison said, "with a minimum of Government control and Government regulation, will be the interest of private groups and their willingness to take the leadership so ably displayed by those communities along the routes of Skyway One."

**Must Pay Its Way.**—Turning to the situation of civil aviation today, Mr. Alison continued: "Although aviation development has received its greatest impetus from two world wars, I am a civil aviation enthusiast and optimistic concerning its peacetime future. I have been closely associated with aviation as an instrument of destruction. I am happy that my present position gives me an opportunity to work for what I believe to be ultimately aviation's greatest value—its cultural contribution to civilization. Unfortunately, the affairs of the world today are such that our military air strength is our prime consideration, but our ultimate air strength, I am firmly convinced, lies in the development of a strong and profitable civilian air economy. The maintenance of a large fleet of military airplanes, contributing little to our domestic economy, in time can weigh our country down with the burden of their maintenance. Aviation must begin to pay its way. Armed British seapower was built in the shipyards that were so necessary to her commerce. Air power growing out of a healthy and a profitable air transportation system and a healthy and a profitable personal flying industry can do much to ease the drain on our nation's pocketbook and multiply our military air strength manifold."

"The goal of a healthy civilian air economy is one on which I think we all agree, but questions of how to attain this goal are ones which require much consideration. The great strides that we have made in carrying passengers by air are a tribute to the airlines of the United States, but expansions in this field are somewhat limited by the very strides which we have made. Without going too deeply, I would like to mention at this time what I believe to be two great potential markets which we have scarcely touched—the movement of goods and commodities by air and the use of the personal airplane by the private citizens."

**Aviation Still New.**—"The Wright Brothers flew the first airplane in this country in 1903, but the airplane is still new—brand new. Lots of men have put their hearts and their lives into the development of

aviation as we know it today, but aviation is still new. A survey made by the Department of Commerce last year shows that less than one one-hundredth of 1 percent of the nation's commerce was carried by air. As small as this is, it is encouraging because it is many times the amount carried by air the year before. I believe it reasonable to assume that 1 percent of even more of our goods and services are suited for movement by air in the not too distant future. I have confidence that our manufacturers will produce airplanes that will move goods at a cost low enough to generate this traffic and that the air carriers of this country will go out and get the business. It is obvious that when this is done, many times the number of airplanes now flying the airways of this country

## Get Enthusiastic Reception

Greeted at each stop with enthusiastic response and excellent cooperation for the program of marking the 40-mile wide, coast-to-coast skyway for private fliers, the survey party for Skyway One made its return trip from Washington, D. C., September 16, via the southern leg of the skyway. Meetings were held with Chambers of Commerce, civic groups, and State officials at each stop. The party, composed of representatives from the Washington Board of Trade, the Los Angeles Chamber of Commerce, and the CAA, stopped at the following: Richmond, Va.; Greensboro-High Point, N. C.; Spartanburg, S. C.; Atlanta, Ga.; Montgomery, Ala.; Jackson, Miss.; Shreveport, La.; and Dallas and Fort Worth, Tex.

will be needed to carry the air commerce of the nation. Out of the factories which build and maintain these airplanes, we can build and maintain, at a minimum cost to our people, the greatest air power in the world. Its effect will be felt in every walk of life, as people gear the tempo of their lives and their business activities to the speed of air transportation. Its effect on the expanding economy of this country will be hard to measure."

Continuing, Mr. Alison said that "air power includes all phases of flying—civilian and military, commercial and private, the air industry and the aviation know-how of our people."

**Backbone of Defense.**—"The development of personal air transportation, in which you here are so very much interested is an integral part of that air power. It will not only speed man's daily life, enabling him to crowd more hours of accomplishment and recreation into his life span, but will round out our aviation pattern to one well-balanced for the acceleration of the economy of our Nation and for the defense of our country. The development of a healthy and profitable personal flying industry will require factories which will contribute mightily to the manufacture of military aviation components in time of war. The men and women engaged in this peacetime industry will be the reserve of trained civilian hands and brains so necessary if we are faced with another modern war."

"The needs of personal transport are such that in spite of the fact that we see private flying at this stage of its development as something rather small, the opportunities for almost unlimited development of aviation lie in this direction."

# Gainesville, Mo., Sets Example for Towns Along Skyway One

Gainesville, Missouri, population 300, has set a good example of practical air-mindedness that other small towns along Skyway One across the continent would do well to emulate. For Gainesville is air-marked, or "on the air," as its flying mayor, H. T. Harlin, wrote in a recent letter to Blanche Noyes, Chief of Air Marking of the Civil Aeronautics Administration.

**Marker Saves Lives.**—Gainesville's air marker already has saved lives, the mayor revealed, and he added: "I think that all towns, no matter how large or how small, should be marked. More power to you!"

Marking of many hundreds of such towns along the officially designated Skyway One from Los Angeles to Washington, D. C., is the aim of the chamber of commerce of the western city and the board of trade of the Capital who are heading the plan. They will appeal to business and civic groups, mayors, local aviation organizations, State aviation associations, and all agencies or individuals who will assist in making the skyway the best-marked route for private flyers in the country.

Gainesville is just south of the northern arm of the new Skyway as it veers north out of Abilene, Texas, through St. Louis and on east. But Gainesville is in the Ozark Mountains where there are not too many landing spots, and where the mayor, who holds a student pilot's license, got an airport started in the course of a single stroll from one end of the main street to the other—at no cost to his city.

"We had a plane fly to our town to go fishing," Mayor Harlin wrote. "The pilot, not knowing the town, flew into our high-lines which put the town out of power for a few hours. The pilot landed safely with no damage to the plane."

**Got Field and Marker.**—"The next day I started down the street for contributions to buy land and build a landing strip. Within 3 hours I had enough money to build the landing strip with help of county machinery and the Bushong Bros. mercantile store donating the land. Work started soon and after 2 days' work with a bulldozer in heavy timber, and county machinery grading, I called a friend of mine from West Plains, Mo., to fly over and land."

"I was still not satisfied with Gainesville not having a name, so I contacted the Missouri aviation department and obtained large paper letters which were used in painting the marker."

Already two pilots have written the mayor that the marker saved them from forced landings which might have been serious or fatal. Both flew over Gainesville in stormy weather, saw the marker and landed at the new airport until the weather cleared. Both thanked the mayor for putting in the marker.

## CAA Survey of Plane Owners

Final results of the survey of aircraft owners conducted by the Civil Aeronautics Administration are now being tabulated. A preliminary report was issued this month. The survey was made in order to determine the amount and type of flying performed by civil aircraft during 1946 in the United States. The survey was conducted by mail and personal interview using standard, scientific sampling techniques. Replies were received from about two-thirds of the total canvass. These are the first statistics of this kind gathered since 1942.

## Controls Were Locked In LaGuardia Crash The CAB Decides

The inability of the pilot to actuate the controls due to the gust lock being on, resulting in the pilot's decision to discontinue the take-off at a point too far down the runway to permit stopping within the airport boundaries is given by the Civil Aeronautics Board as the probable cause of the United Air Line accident at LaGuardia Field on May 29, 1947.

Forty-three of the forty-eight occupants were killed, four sustained serious injuries, and one, the pilot, received only minor injuries; the aircraft was demolished by impact and partially consumed by fire.

**Requested Runway 18.**—With passengers and crew aboard, Capt. Benton R. Baldwin, pilot of United's Flight 521 (New York-Cleveland), requested taxi instructions from the tower after the engines were started. Clearance was given to Runway 13, with wind reported by the tower as south, variable to southeast, 20 miles per hour. After taxiing out, the aircraft was parked approximately 50 feet adjacent to Runway 18, the engine "run-up" and the take-off check accomplished. Captain Baldwin held at this point for approximately 6 or 7 minutes because of an unexpected difference which occurred between him and airway traffic control with reference to his clearance. The control tower operator was positive that clearance was originally given to Runway 13 and that only after Runway 18 had been requested by Captain Baldwin, was the ship cleared to that runway. The choice of runways is a responsibility of the pilot; the tower "clears" only on the basis of traffic considerations.

**Didn't Respond to Controls.**—After the tower delivered the corrected clearance from airway traffic control, Flight 521 taxied from its parked position, rolled onto Runway 18, and without pause or hesitation accelerated for take-off. The throttles were advanced; air speed increased to above 90 miles per hour. Captain Baldwin testified that he applied back pressure to the control column, but the "feel" of the controls was "heavy," and the aircraft did not respond. As the plane continued toward the boundary of the field, Captain Baldwin decided to discontinue his take-off. About 1,000 feet from the south end of the runway he applied brakes, ordering the copilot, Robert E. Sands, to cut the engines. A ground-loop was attempted by heavy application of left brake, but the aircraft proceeded to roll straight ahead. Then, with both brakes locked, it continued over the remainder of the runway, crashed through the fence at the airport boundary and half-bounced, half-flew across the Grand Central Parkway. The aircraft finally came to rest at a distance of 800 feet from the end of Runway 18 and 1,700 feet from the point at which brakes were first applied. The plane was almost immediately enveloped in flames.

**Discard Wind Shift and Load Theories.**—In its report of the accident, the Board said that the first assumption considered as the probable cause of this accident was that the plane failed to clear the end of the runway because of a sudden wind shift which occurred during the take-off roll. Subsequent evidence showed this assumption to be highly suspect since the wind shift, according to the tower, occurred 4 minutes after the crash.

"Again," the CAB report continues, "it may be thought that the plane was overloaded and hence failed to take off. It is true that the plane was overloaded according to the correct calculations for this runway, derivable from the approved operating manual for this type of plane with due reference to gradients and obstacles present on Runway 18. According to the testimony of the engineers and other

## Civil Aviation Highlights

Airports in operation, Sept. 1.....	5,418
By type:	
Commercial .....	2,623
Municipal .....	1,718
CAA intermediate .....	182
Military .....	573
All others .....	322
By class:	
Class I and under .....	3,296
Class II .....	846
Class III .....	517
Class IV and over .....	759
Scheduled air carrier aircraft, Sept. 1.....	926
Washington National Airport, August:	
Scheduled air carrier:	
Passengers departing .....	55,116
Passengers arriving .....	50,889
Aircraft arrivals and departures .....	9,581
Aircraft arrivals and departures other than scheduled air carrier .....	4,635
Air Traffic Activity:	
Aircraft Operations handled by Airport control towers (in thousands):	
July 1947 .....	1,827
July 1946 .....	1,174
Fixed postings handled by airway control centers (in thousands):	
July 1947 .....	868
July 1946 .....	760

experts, an airplane loaded to this weight, despite the fact that the legal requirements were not met, should have taken off without difficulty from this runway, provided that the airplane was functioning normally."

The Board said that no evidence was found which indicated that there was any mechanical failure or malfunction of the aircraft or any of its components.

**Evidence Points to Locked Controls.**—The theory that Captain Baldwin employed improper pilot technique was dismissed as "only a surmise" by the Board, which concluded that a more probable hypothesis as to the cause of the accident was that the gust lock had not been released. Several factors inclined the Board toward this hypothesis. Because of the gusty character of the winds, the gust lock was on when the ship taxied to its holding point. Because of delay at the holding point, the gust lock may well have been left on or reapplied after the pre-take-off check with the intention of immediately releasing it upon starting the take-off roll. The Board also considered the attitude of the plane during the take-off roll. Even if no wind conditions prevailed, at the point where power was cut off, the plane should have had a speed of 112 miles per hour. At this speed it could easily have been pulled aloft, but the nose-wheel did not even leave the ground, according to testimony of all observers and Captain Baldwin.

The gust lock is a mechanism which, when locked, holds the ailerons, elevators, and the rudder in the neutral position. The controls are locked when the control handle is in the "up" position and unlocked when it is "down." In the inspection, following the crash, the Board stated that no reliable evidence was obtained from the position of the controls. Impact tension on the control cables and acceleration forces on the controls themselves during the course of the crash may have altered their true position. Since the gust lock handle "could have been raised as a result of cable tension from impact, its position cannot be regarded as indicative of the gust lock being either on or off during the course of the take-off roll," the Board stated.

The report indicated that corrective action had been taken, stemming from the Civil Aeronautics Board, the President's Special Board of Inquiry on Air Safety, the Civil Aeronautics Administration, and the municipal airport authority.

## CAR Offenders Kept From Higher Ratings By CAA "Stop Orders"

Stop orders to prevent offenders from obtaining higher pilot ratings while under charges for violating Civil Air Regulations were inaugurated early in September by the Civil Aeronautics Administration.

Special instructions from the CAA legal office to inspectors in the field say that "in certain aggravated cases," the regional attorney will recommend that the pilot continue to hold only his current certificate until the case is settled by the Civil Aeronautics Board. This, the CAA explained, will prevent a student pilot, for example, from going on to get his private certificate while he is charged with violations that cast doubt on his ability or fitness to hold any license. Private pilots charged with serious offenses have, in some cases, obtained commercial certificates and engaged in flying for hire before their cases have been heard.

Regional CAA attorneys will recommend the issuance of stop orders against the alleged offenders only in the following cases: (1) The violation is of a flagrant and willful nature; (2) Reasonable grounds exist for believing that the alleged violator lacks the competency required for a certificate of a higher rating than the one he holds because of: (a) His demonstrated lack of knowledge or skill; (b) His demonstrated indifference to the safety of others.

## Family-size Plane Regains Lead July Production Figures Show

Family-size planes regained the production lead in July which they lost to the two-place plane during May and June, even though there was a drop in production for all classes of civil planes. The three- and four-place planes totaled 508, while the two-place planes totaled only 475.

Total aircraft manufacturers' shipments came to approximately \$45,000,000 in July, representing a 50 percent drop in value below the \$90,000,000 reported for June. This decline was largely due to a sharp decrease in payments received from the United States military services. Such payments represent the amount of money which manufacturers obtained from United States military customers during the month, regardless of when the aircraft or parts may have been accepted.

Employment in aircraft plants showed little change, the number of workers dropping from 140,258 in June to 139,600 in July.

Civil plane shipments dropped 16 percent in number (998 against 1,193) and 43 percent in value (\$11,900,000 against \$20,700,000), during July.

The July civil plane shipments were as follows:

	July	June
Total .....	998	1,193
By number of places:		
2-place .....	475	590
3- and 4-place .....	508	572
Over 4-place .....	15	31
By number of engines:		
Single engine .....	983	1,162
Multiengine .....	15	31
By total rated horsepower (all engines):		
1-74 horsepower .....	175	203
75-99 horsepower .....	268	373
100-399 horsepower .....	536	583
Over 399 horsepower .....	19	34

## National Airport Books Show Six-Year Income Of 3½ Million Dollars

Balancing its books after 6 years of operating Washington National Airport, the Civil Aeronautics Administration reports that the only commercial field owned and operated by Uncle Sam has earned \$3,556,115 in revenue.

Measured against congressional appropriations of \$3,620,431 for operation of the airport, this brings the net Government cost for running one of the world's largest and best airports to only a little more than \$10,000 a year. During 3 of its 6 years—1942, 1945, and 1946—the airport showed a profit, and Bennett Griffin, recently appointed airport administrator, has plans which he hopes will put the field in the black to stay.

This is the way the balance sheet stands at the end of fiscal 1947:

	Appropriations	Income
1942-----	\$377,645	\$403,263
1943-----	521,500	443,901
1944-----	558,000	516,470
1945-----	559,000	594,725
1946-----	730,535	756,375
1947-----	873,751	*841,381
Total-----	3,620,431	3,556,115

\*Incomplete.

During the war use of the airport by the military grew tremendously. This use, of course, did not result in cash income to the airport. Moreover, it interfered with one of the lucrative sources of income, the dimes that visitors pay to enter the promenade decks and watch the airplanes. For a while, because of security needs, private citizens were excluded from these decks, and during most of the war the impression, mistaken or correct, that they were not welcome, affected the income through dimes.

**Plan New Hangars.**—Rents and services provide the largest slice of the airport's income. Bennett Griffin will have five new hangars to rent, the first one to be ready about May of next year, and like most other landlords today, he has a waiting list.

The huge terminal building is now crowded, and would-be tenants are clamoring for space. The present high cost of building affected the appropriation requested to construct an extension on this building, and this must wait for awhile.

Enthusiasm of the administrators of the airport for real black-figure operation has been general. John Groves, first manager, was just getting the plant into the "big money" when he left the CAA for a job in private industry. Continuing the same policies, Hervey Law planned ahead to the time when the airport would boast a hotel, shopping center, automobile service station, and many other income-producing facilities. He left to take charge of airports for the Port of New York Authority before any of these plans could mature.

"Why, this airport is a small city," Hervey Law used to say in describing the field. "We have a fire department, a big public works organization, a police force, central heating, and about 8,000 residents who are here every day earning a living. It can and does make money for the U. S. Government."

**Visitor's Dimes Big Item.**—Money comes in from many sources. In an average year, visitors drop \$35,000 in dimes in the turnstiles just to hang on the rail and watch the planes unload, load, and take off. This sometimes turns out to be a sizeable dime's worth too, because the big names of the world have been using Washington National in its first 6 years.

The limousine company pays for the franchise; the restaurant people contribute part of their profits to the

## Airport Activity Up 2 Percent in July

Total plane take-offs and landings at the 43 busiest airports in the country rose 2 percent in July above the previous month, and 22 percent above July 1946.

Military aircraft operations showed the greatest gain over last year (43 percent). Scheduled air carrier operations were up 11 percent; other civil aircraft operations registered a 24 percent advance.

Total traffic at these 43 selected airports in July 1947 came to 756,775 operations of which the sched-

uled airlines accounted for 24 percent, other civil aircraft 66 percent, and military planes 10 percent.

Eight airline terminals reported air carrier aircraft operations above the 6,000 mark. In descending order they were: La Guardia, 14,097; Chicago Municipal, 12,315; Washington National, 9,796; Miami, 6,595; Los Angeles, 6,573; Detroit Willow Run, 6,244; San Francisco, 6,043; and Pittsburgh, 6,028.

Below are figures for July 1946 and 1947:

### Aircraft Operations at 43 Selected Airport Control Towers

Tower	July 1947				July 1946			
	Air carrier	Other civil	Military	Total	Air carrier	Other civil	Military	Total
Albuquerque.....	2,338	1,738	3,649	7,725	2,775	627	1,228	4,630
Amarillo.....	2,490	2,161	267	4,918	2,784	3,968	1,855	8,607
Atlanta.....	4,411	41,695	270	46,376	4,404	33,213	314	37,931
Baltimore.....	3,024	14,593	878	18,495	2,923	15,358	216	18,497
Birmingham.....	1,782	14,693	2,899	19,374	2,514	14,575	508	17,597
Boston.....	5,723	2,299	498	8,520	4,559	2,053	362	6,974
Buffalo.....	2,558	8,444	288	11,290	2,563	8,814	310	11,687
Burlington.....	3,352	5,675	2,724	11,751	7,467	1,990	713	10,170
Chicago (municipal).....	12,315	10,613	403	23,331	11,173	5,745	1,438	18,356
Cleveland.....	5,893	49,231	7,747	62,871	5,049	45,459	1,211	51,719
Columbus.....	2,159	12,193	5,464	19,816	1,854	5,545	4,519	11,918
Covington.....	3,765	7,238	23	11,026	2,299	16,450	629	19,378
Dallas.....	5,801	5,407	48	11,256	5,334	4,089	142	9,565
Dayton.....	2,919	17,207	178	20,304	2,622	10,791	348	13,761
Denver.....	3,826	16,076	8	19,910	3,590	12,651	6	16,247
Detroit (Willow Run).....	6,244	1,409	48	7,701	.....	.....	.....	.....
El Paso.....	1,692	18,552	265	20,509	2,414	23,369	33	25,816
Fort Worth.....	2,996	13,131	51	16,178	3,294	14,753	179	18,226
Honolulu.....	3,789	7,668	1,229	12,686	.....	.....	.....	.....
Houston.....	2,329	10,674	77	13,080	2,049	6,898	931	9,878
Indianapolis.....	3,181	29,265	226	32,672	3,042	19,665	374	23,081
Jacksonville.....	4,013	2,648	1,054	7,715	4,033	626	473	5,132
Kansas City, Mo.....	5,212	19,751	67	25,030	5,230	13,690	80	19,000
Los Angeles.....	6,573	6,456	1,657	14,686	666	2,031	636	3,333
Memphis.....	2,811	2,668	3,925	9,404	3,113	841	5,744	9,698
Miami.....	6,595	8,137	3,453	18,185	5,541	8,133	1,696	17,370
Minneapolis.....	2,838	17,433	15,172	35,443	2,493	9,126	4,657	16,276
Nashville.....	3,010	1,902	3,685	8,597	3,131	1,437	1,353	5,921
Newark.....	4,183	2,431	2,435	9,049	4,355	2,315	1,968	8,638
New Orleans.....	2,275	655	116	3,046	2,748	441	189	3,378
New York (La Guardia).....	14,097	2,752	48	16,897	13,227	4,067	422	17,716
Oakland.....	3,263	15,910	5,948	25,121	2,411	4,860	4,614	11,885
Omaha.....	2,590	24,779	80	27,449	2,648	18,184	66	20,898
Philadelphia.....	5,437	1,649	173	7,259	4,162	741	78	4,981
Phoenix.....	2,421	30,456	61	32,938	3,187	23,343	96	26,626
Pittsburgh.....	6,028	6,245	192	12,465	6,382	6,094	201	12,677
Portland.....	3,057	1,705	1,173	5,935	2,414	534	706	3,654
St. Louis.....	4,477	12,356	2,052	18,885	4,407	24,136	6,499	35,042
San Francisco.....	6,043	8,134	452	14,629	4,857	4,618	1,035	10,510
Seattle.....	2,985	14,902	207	18,094	2,121	10,414	955	13,490
Tulsa.....	2,362	7,285	1,715	11,362	1,923	10,096	956	12,975
Washington, D. C.....	9,796	3,209	1,354	14,359	9,826	4,671	2,912	17,409
Wichita.....	2,340	17,031	1,067	20,438	2,488	6,265	609	9,362
Total.....	184,993	498,456	73,326	756,775	166,072	402,676	51,261	620,009
Percent of total.....	24	66	10	100	27	65	8	100

<sup>1</sup> Listed in July 1946, as Cincinnati (Kenton).

airport; penny machines selling various items turn in a few hundred dollars a year; concessions are let for the sale of souvenirs and sightseeing rides; an aviation gas and fuel company buys sales rights on the field; and an advertising company recognizing the value of delivering sales messages to the throngs that use and visit a big airport, pays for space in the lobby for display advertising devices and for the right to publish an airport newspaper.

It takes big money, however, to operate a big airport. The Administrator points out, for example, that adequate fire protection at the airport involves not only the 76 buildings there, many of them wooden, temporary wartime structures, but the planes which operate in and out. A force of five firemen, especially trained in fighting aircraft fires, is on duty at all times. Equipment for fighting plane fires is expensive, too, consisting of a truck able to project a huge cone of fog under high pressure straight through a gasoline fire to the door of a disabled plane. A safety engineer is on the pay roll to enlist and train the additional help always needed in such emergencies.

**40-Year Pay-Off Period.**—The CAA anticipates the airport will pay for its hangars, administration

buildings, and such facilities over a period of 40 years, and its rents are adjusted to that condition. Whether the airport will be completely outdated and useless before that time is a question which only the rapid development of aviation can answer, but experts point to College Park, Md., airport, near Washington, which has been a landing field since 1906; and to airports on Long Island which are now 30 years old. Proximity of Washington National to the city promises it a life of at least 40 years, they believe, and in most of those years it should be able to take in more than Congress has to appropriate to operate it.

The CAA is not emphasizing income to the detriment of other operations at the airport. A recent innovation of parking meters in the circle in front of the administration building was criticized by the press. Griffin pointed out that this was a means of controlling traffic so that persons coming to put friends on the planes or for brief visits, might have a convenient place to park. There are only 32 parking meters and more than 4,500 free parking spaces. Griffin explained plaintively that he had been forced to put the meters in.

"Why," he said, "people come over here and park their cars for 3 or 4 days while they go off to Europe."



# Personal Aircraft Requires Additional Utility To Gain Broader Market, T. P. Wright Says

(Continued from page 109)

an educational program including a large-scale plan of training under the so-called G. I. Bill of Rights. It is in the final phase that we must concentrate our efforts now; here, in the improvement of the utility of the aircraft itself, the need is great."

**More Planes; Lower Cost.**—Mr. Wright then said that a basic desire to fly and own a personal aircraft definitely exists and that in order to satisfy that desire, the utility of the aircraft must be increased in all of its elements. With reference to price, he declared that a considerable reduction is necessary and can result from designing, with the objective of lower production costs in view, and from the all-important reduction in cost incident to increase in production quantities. Operating costs can also be reduced, Mr. Wright continued, pointing out that the present cost of one year's operation is about one-half of initial sales price and predicting that that figure can be reduced to approximately one-quarter.

In the matter of size and speed of the personal plane, Mr. Wright emphasized his belief in the need for concentrating development efforts on the four-place or family plane and proposed 150 mph as an appropriate cruising speed. He then continued: "Items which should be improved to the maximum extent possible, after achieving the cruising speed mentioned are: decreased take-off distance, increased rate of climb, and lowered landing speed. This latter item I believe to be essential from the standpoint of ease of flight and reduction of training time, as well as safety . . . I would like to see stalling speed at 45 mph which makes possible a usual landing speed of 40 mph."

**Predicts Wide Use.**—The cross-wind landing gear Mr. Wright said "is a feature that has held intense interest for us in the Civil Aeronautics Administration during the past two years—an interest now general in the United States." In formulating the program, Mr. Wright said that it was decided that if practicable, the burden of another control should not be added to complicate the already arduous task of the pilot, and development was therefore based on a caster gear with suitable centering return and antishimmy devices. Because of the extremely favorable results achieved so far, Mr. Wright expressed no hesitation in predicting the universal adoption of the caster cross-wind landing gear for personal aircraft, with very substantial uses on many, if not all, other types as well. Small increases in weight and cost will be insignificant in comparison with added advantages.

Briefly discussing the various categories of accidents, Mr. Wright said in part: "First, there is that major source of accident, the falling off from a stall into a spin (unless the ground intervenes!). Forty-three percent of fatal accidents are attributed to falling off from a turn . . . An entirely practicable and readily available aid is a simple stall warning device. Rapid recovery from a spin, say 1½ turns, is necessary should the autorotating conditions be reached.

**Asks Design Improvements.**—"Here I would like to make a plea for increased rate of climb as an accident inhibitor. Statistics indicate a decrease in stall-spin accidents with increase in rate of climb . . . I suggest that not less than 500 feet per minute under standard air sea-level conditions should be achieved.

"Next is need for care in obtaining positive static and dynamic stability, qualities in the aircraft that require of the pilot less constant attention to his controls and make for ease of flying. The two-control system aids in this same direction.

"Gains for safety can be obtained by preventing overloading and an improper distribution of load that creates large shifts in CG . . . The design of a weight and balance indicator, available to the pilot, would be important.

"Design for ease of maintenance, of course, will

contribute toward proper maintenance. Improved visibility will help eliminate collision and taxiing accidents. Better ground stability and use of the cross-wind landing gear will likewise assist in this regard.

"If a plane incorporating all these features were to be designed and should it be placarded against acrobatic maneuvers, a weight compensating reduction in load factors would, I believe, be permissible with a substantial improvement in over-all safety . . .

"One final device for improving safety is a 'flight operating characteristic indicator.' This would make readily available to the pilot essential airplane characteristics such as take-off distance; best climb speed; maximum rate of climb; landing distance; indicated stalling speed (0° and full flap); all under combinations of the variables, gross weight, airport altitude, temperature and wind velocity . . . A display box has been devised experimentally which permits very rapid selection of the proper table (tables printed on a roll of paper for turning for pilot view through display window). By having accurate knowledge of the aircraft's characteristics under varying conditions, safety would be enhanced."

Mr. Wright continued by saying that in all such analyses, a dual approach must be made: one aiming at the improvement of the aircraft, another at the education of the public. In actual practice it has been found that too large a number of accidents result from pure carelessness, and an educational poster campaign has been instituted in the hope of instilling in the pilot the need for constant vigilance and for refraining from letting his attention be diverted into channels conducive to accidents.

"Coupled with the important need for making our flying public safety conscious and in improving the airplane to such an extent that it is inherently safer to operate," Mr. Wright continued, "is the need for designing for what may be termed 'accident survival . . . Improvement in cockpit design and strength; the introduction of general use of the shoulder harness as against the safety belt; plus many other design innovations (which will not, in general, make for increased cost) are known. These will minimize injuries and should be installed."

**Air-Ground Vehicle.**—Mr. Wright pointed out the obvious desirability of being able to use the same basic vehicle when traveling in the air or on the ground. Such a vehicle would serve the need for additional transportation after landing at an airport and for other occasions. Among the various suggestions which have been made as to the appropriate means of accomplishing this, the natural first thought was to fold the wings of the plane. Another method would be to remove the wings, store them, and continue on as a road vehicle.

"A development of considerable interest in the United States, aptly called the 'flying automobile,'"

Mr. Wright said, "points toward the removal of everything that is involved in flight at the time the wings are removed on the ground. This would contemplate wing mounting of booms for supporting the tail unit; of the powerplant unit; and of flying controls, so that with the removal of the whole assembly a suitable vehicle for road travel would remain. This, of course, would require a small separate powerplant for driving the resultant automobile."

**Detachable Wings for Rent.**—In discussing other possibilities for a roadable plane, Mr. Wright suggested its use in the so-called "you-drive-it" field, where the automobile could be picked up in town on a rental basis, driven as desired around town or to an airport where the wings and flight components could be attached and the combination used as an airplane. Another intriguing possibility would be to use the roadable plane in the development of a cross-country transportation system. Wing units would be located at airfields, ready for attachment to the automobile unit. However, if the weather should prevent flying, the trip could be continued by road and the wings could be picked up at another airfield, further along, after the weather had cleared.

Noting that the helicopter possesses many characteristics that make it a potentially important contender for the personal aircraft market, Mr. Wright added: "It surely will prove extremely important in some fields, possibly several. Among them is certain to be the taxi service side of air transportation—airport to city building roof."

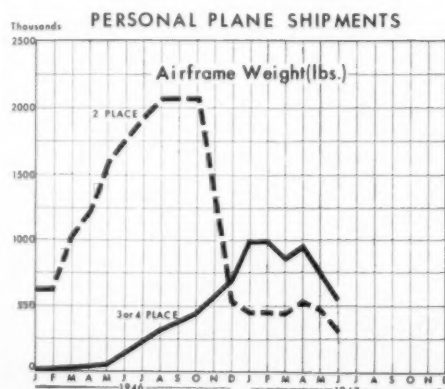
In many parts of the United States, Mr. Wright pointed out, the weather is such as to permit flying most of the time. In other parts, this is not possible without suitable aids, thereby limiting the airplane's use for extensive cross-country travel to 75 or 80 percent of the time unless aids are incorporated, and with them possibly 90 to 95 percent on the average. The problem of incorporating the airborne equipment necessary to use all of the electronic ground aids now being provided is a serious one; present weight and expense making many of them prohibitive for the personal aircraft owner.

**Quiet Plane Achieved.**—The CAA, Mr. Wright said, has emphasized the "good neighbor" feature of noise reduction during the past two years, creating a very general interest in the matter. A program of research investigation, instituted by the NACA, reveals that a satisfactory reduction in noise can be achieved by use of a four-bladed propeller with a geared-down engine and with an entirely practicable exhaust muffler. Such an installation, Mr. Wright said, is believed to be a "must" for future personal aircraft.

Mr. Wright then discussed the importance of a suitable system of airports for private flying, pointing out that the CAA's airport program, involving all sizes of airports, is aimed at doubling the number of airports existing at the start of the program. Considerable importance is also attached to the use of landing strips, which can be more readily utilized by planes equipped with crosswind landing gear. Mr. Wright continues: "I might add that although our airport plans for the fiscal years 1947 and 1948 are not in general based on one runway fields for the smaller categories, we nevertheless do plan to base our program for 1949 on the assumption of general adoption of the crosswind landing gear in time to use the strips created under that program."

"Although there are still present in our regulations some requirements to which some people object," Mr. Wright stated, "we feel we are moving forward in the direction of relaxation as rapidly as the safety record permits."

Concluding his address, Mr. Wright spoke of the importance of personal aircraft from the standpoint of furnishing pleasure to its owner, and said that in emphasizing its utilitarian features, "we have perhaps in effect gone a little far in depreciating the consideration of the airplane as a most remarkable vehicle, one that takes us into the third dimension—a whole new field of experience."



## Schools in 48 States, Alaska and Hawaii Offer Air Courses

Schools in 48 States and the territories of Alaska and Hawaii will offer courses in aviation education during this school year.

**More State-Wide Programs.**—Aviation education sponsored and encouraged by the Civil Aeronautics Administration's Aviation Education Division, enters its seventh year with all States participating. Twenty-three have approved plans for State-wide programs, as against nineteen which had approved State-wide programs in 1946.

Basic work for the programs is conducted by the Education Division in cooperation with State Departments of Education and universities all over the country. Abstracts of material available and syllabi are prepared covering the field from elementary grades to colleges. One such project is now under way in the University of Southern California under the supervision of Dr. C. C. Crawford, director of curriculum laboratory.

These suggested outlines for aviation education are prepared for teachers as an aid in integrating aviation subjects into existing courses. In addition to teaching the elements of the science of aeronautics, a prime purpose is to bring the importance of the airplane, as an economic and cultural force, to the attention of pupils and students at every level.

**Have Own Bulletins.**—In Wyoming and North Carolina, aviation education teachers will be assisted by the recently issued bulletin, "Aviation Education for Wyoming Schools," and in North Carolina by "Education for The Air Age." Both were written and edited by school personnel with the assistance of CAA educationalists. In four other States, Kentucky, Georgia, Louisiana, and Tennessee, bulletins are expected to be issued to their respective schools within a few months.

The outlines cover general as well as special fields, and teachers in all parts of the country will be given an opportunity, through CAA operations institutes, of seeing aviation in operation at various airports, where flying and associated activities will be both demonstrated and explained to them.

The scope of the aviation education program has been expanded to include Alaska and Hawaii and a survey of the needs in Alaska is virtually completed. In Hawaii the work is underway.

## ILS Use

(Continued from page 109)

**Chicago and Southern.**—Detroit, Mich.; New Orleans, La.; Jackson, Miss.; Memphis, Tenn.; Chicago, Ill.; Indianapolis, Ind.; Houston, Tex.; and St. Louis, Mo.

**ILS Locations.**—The instrument landing systems commissioned are at the following locations: Bakersfield, Oakland, and Los Angeles, Calif.; Denver and Grand Junction, Colo.; Washington, D. C.; Jacksonville, Fla.; Atlanta, Ga.; Chicago and Moline, Ill.; Indianapolis, Ind.; Wichita, Kans.; New Orleans, La.; Detroit, Mich.; Minneapolis, Minn.; Jackson, Miss.; St. Louis and Kansas City, Mo.; Billings, Mont.; Omaha, Nebr.; Las Vegas, Nev.; Newark, N. J.; Albuquerque, N. Mex.; New York (LaGuardia) and Buffalo, N. Y.; Raleigh, N. C.; Cincinnati, Dayton, and Cleveland, Ohio; Oklahoma City and Tulsa, Okla.; Portland and Eugene, Oreg.; Erie, Philadelphia, and Reading, Pa.; Charleston, S. C.; Knoxville and Memphis, Tenn.; Dallas, Fort Worth, Houston, El Paso, San Antonio, Austin, Amarillo, and Brownsville, Tex.; Salt Lake City, Utah; Seattle, Wash.; and Cheyenne, Wyo.

## U.S. Airports Increase In 4-month Period

During the four-month period, April 1-August 1, 1947, almost 800 airports primarily available to civilian flying were added to the United States total. The number of such airports advanced from 3,968 to 4,751. In the same period, the combined total of all civil and military airports on record with the Civil Aeronautics Administration increased from 4,728 to 5,337.

Commercial airports increased from 2,124 to 2,558. Municipal airports moved up from 1,484 to 1,701. The military services released another 174 airports for civil use, cutting their airport total from 760 to 586.

The following table shows the state-by-state record of airports classified by type as of the first of August:

### Airports by Type on August 1

(Data covers existing airports recorded with CAA)

State	Type					
	Total	Commercial	Municipal	CAA Intermediate	Military <sup>1</sup>	All others <sup>2</sup>
Ala.	94	40	28	2	20	4
Ariz.	133	41	37	8	32	15
Ark.	84	48	18	1	2	15
Calif.	393	181	110	10	65	27
Colo.	90	32	38	2	8	10
Conn.	33	21	10	1	0	1
Del.	21	15	2	0	1	3
D. C.	3	0	0	0	2	1
Fla.	217	39	78	2	91	7
Ga.	124	46	45	5	21	7
Idaho	74	11	48	4	3	8
Ill.	132	77	22	5	19	9
Ind.	147	107	28	2	8	2
Iowa.	106	61	39	4	1	1
Kans.	179	73	69	3	26	8
Ky.	59	46	8	2	3	0
La.	75	26	23	4	11	11
Me.	78	46	22	0	4	6
Md.	51	32	5	0	7	7
Mass.	74	47	18	0	7	2
Mich.	211	96	105	0	6	4
Minn.	104	51	53	0	0	0
Miss.	93	43	31	5	9	5
Mo.	125	76	32	6	9	2
Mont.	96	14	54	11	1	16
Nebr.	98	35	39	5	12	7
Nev.	49	17	10	8	11	3
N. H.	33	20	12	0	1	0
N. J.	83	61	10	0	5	7
N. Mex.	102	34	29	10	11	18
N. Y.	220	155	42	3	12	8
N. C.	147	101	25	1	20	0
N. D.	49	15	28	6	0	0
Ohio.	162	116	33	6	4	3
Okla.	148	61	67	3	10	7
Oreg.	92	34	43	5	2	8
Pa.	199	146	42	3	5	3
R. I.	10	5	1	0	3	1
S. C.	73	20	28	2	15	8
S. Dak.	58	23	28	1	5	1
Tenn.	69	34	20	4	7	4
Tex.	455	182	135	21	72	45
Utah.	46	7	25	10	3	1
Vt.	18	9	9	0	0	0
Va.	107	67	17	3	19	1
Wash.	122	47	48	4	14	9
W. Va.	39	24	11	2	0	2
Wis.	112	65	44	2	1	0
Wyo.	50	11	32	5	1	1
Total	5,337	2,558	1,701	184	586	308

<sup>1</sup> Indicates Army, Navy, Army-operated, and Navy-operated (latter 2 are municipal or commercial airports taken over by Army or Navy).

<sup>2</sup> Includes private and miscellaneous Government airports.

## Gain in WNA Airline Travel

More than 106,000 airline passengers passed through the National Airport at Washington, D. C., during August. The August total represented a 12-percent gain over the July figure of 94,240 airline passengers. The number of passenger departures was up from 48,840 to 55,116, and passenger arrivals increased from 45,400 to 50,889.

The number of airliner arrivals and departures declined by 2 percent (9,581 compared to 9,796). Military, itinerant, and local aircraft traffic operations showed little change from July.

## CAA to Operate Aids At Pacific Isle Airports

Maintenance and operation of airport facilities at Midway, Wake, and Guam have been taken over by the Civil Aeronautics Administration. They will become part of the Federal airways and constitute a link in the chain over the Pacific.

Both scheduled and nonscheduled operations will be handled at the Pacific Island ports, which will be under the immediate supervision of John M. Beardslee, administrator for the ninth region, which includes the Pacific area, with headquarters at Honolulu.

A survey of the area was made recently by Richard Schall, foreign staff officer in CAA region six, during a proving run of one of the United States air carriers.

Airports at Wake and Guam were operated by Pan American Airways from the time military authorities relinquished them after the war until the CAA took over. Facilities for housing, food, mechanical and other services there will be continued by Pan American under a permit now being discussed with CAA.

It is estimated that the CAA personnel at Wake will be 47, and at Guam, 130. On these islands as well as the others, CAA activities will be strictly confined to the operation and maintenance of field facilities and air navigation and airway communication aids. Size of forces at the other airports has not as yet been determined.

## New Airport Bibliography Made Available by CAA

A new bibliography of material on airports, entitled "Airport Literature—A Selected Bibliography," has just been made available by the CAA. Compiled by the CAA library staff for the Secretariat of ICAO, its distribution will be limited by the CAA. However, single copies may be obtained from the Office of Aviation Information, CAA, Commerce Department, Washington 25, D. C.

Although the material in the bibliography is limited to literature published in the United States, an effort was made to include all of the known printed or processed material in the general field of airport literature, including much of the older material which is out of print and only available in large research libraries. Publications on the subject of local airports were not included except in the case of a few important airports.

The bibliography consists of 15 typed pages and contains 202 items, covering airport material which has appeared between the years 1920 and 1947.

## July Aircraft Engine Output Shows 35% Decline in Value

Aircraft engine manufacturers reported shipments valued at \$21,531,000 in July, a 35-percent decline from the \$33,164,000 in June. Military aircraft engines and parts accounted for \$16,089,000; civil aircraft engines and parts for \$5,257,000; and all other products for \$185,000.

Civil aircraft engine shipments during July totaled 971 engines valued at \$2,972,000—a 3-percent decline in number but a 43-percent drop in value below June (1,002 engines valued at \$5,249,000). At the end of July, manufacturers reported they expected to ship 3,998 civil aircraft engines valued at \$14,400,000 within the next 6 months.

Military aircraft engine shipments advanced in number (386 compared to 346 in June) but showed a 42-percent decline in value (\$11,435,000 against \$19,823,000). As of July 31, manufacturers of United States military aircraft engines reported expected receipts for aircraft engines and parts totaling \$144,000,000 during the next 6 months.



## Regulations

### Special Reg. 397----- Effective Sept. 6, 1947

This regulation requires air carriers to consider temperature variations in addition to the take-off limitations of sections 41.271 and 61.7122. The take-off weight or the minimum length of runway, or both, and the critical-engine-failure speed are to be modified to include certain temperature corrections for individual model airplanes.

### Special Reg. 397-A----- Effective Sept. 6, 1947

Extends effective date of Special Civil Air Regulation 397 (temperature accountability) from September 6 to October 15, 1947.

### Special Reg. 398----- Effective Aug. 25, 1947

The purpose of the following special regulation is to exempt air carrier aircraft from the necessity of complying with the provisions of section 61.7209 of the Civil Air Regulations at La Guardia Field, N. Y., and at Newark Airport, Newark, N. J. That section, which restricts the banking of air carrier aircraft until a minimum altitude of 500 feet has been attained, has the effect of requiring flight over highly congested areas at low altitudes. The avoidance of low flight over such congested areas is deemed more in the interest of safety than the observance of the requirement that no turns be accomplished below 500 feet.

Notwithstanding the provisions of § 61.7209 of the Civil Air Regulations, air carrier aircraft operated in scheduled air transportation taking off from La Guardia Field, N. Y., or Newark Airport, Newark, N. J., may be banked when an altitude not less than 300 feet has been attained and the aircraft has passed over the boundary of such airport."

### Amdt. 01-3----- Effective Oct. 16, 1947

The following sections of Part 01 regarding maintenance requirements which are not consistent with or are duplications of certain sections of Part 43 are repealed.

"01.12 Aircraft operation record requirements; 01.25 Periodic inspection; 01.26 Other inspections; 01.27 Log-books; and 01.270 Log-books for rebuilt aircraft engines."

### Amdt. 04a-8----- Effective Sept. 29, 1947

A review of the fire-prevention regulations adopted by the Civil Aeronautics Board under Amendment 04a-8, effective November 1, 1946, reveals that practical application of these regulations requires some clarification and a change in substance.

Amendment 04a-8 made certain sections of Part 04b, on fire prevention, applicable to Part 04a. Although the following amendment in itself is for clarification only, adoption by the Board on this date of an amendment to Part 04b introduces a change in substance into the fire-prevention regulations of Part 04a by requiring fire detectors in the engine power section.

Part 04a of the Civil Air Regulations is amended as follows:

1. By deleting from the second paragraph of § 04a.062 the words: "of the Part 04 of the Civil Air Regulations which Part was adopted November 9, 1945;" and by substituting in lieu thereof: "of Part 04b of the Civil Air Regulations, as amended;"
2. By deleting from the second paragraph of § 04a.062: "(a) and (c)" which immediately follows the numeral 04.491.

### Amdt. 04b-7----- Effective Sept. 29, 1947

A review of the fire-prevention regulations adopted by the Civil Aeronautics Board under Amendment 04b-1, effective November 1, 1946, reveals that practical application of these regulations requires some clarification and a change in substance. The change in substance requires fire detectors in the engine power section.

Part 04b of the Civil Air Regulations is amended as follows:

1. By deleting from the fourth paragraph of § 04b.00: "(a) and (c)" which immediately follows the numeral 04.491.
2. By amending § 04b.49 to read as follows:

**04b.49 Powerplant fire protection.** Designated fire zones comprise the following regions:

Engine power section; engine accessory section; complete powerplant compartment in which no isolation is provided between the engine power section and the engine accessory section; auxiliary power unit compartments; fuel-burning heater and other combustion equipment installations.

Such zones shall be protected from fire by compliance with the following requirements.

3. By deleting from the first sentence of § 04b.4901 the words: "factory-fixed detachable or other approved fire-resistant ends," and inserting in lieu thereof the words: "end fittings of the permanently attached, detachable, or other approved types."
4. By adding the following clause at the end of the last sentence of § 04b.491 (a): "except in the case of an engine power section which is completely isolated from the engine accessory section by a fireproof diaphragm complying with the provisions of § 04b.4700."

5. By amending § 04b.491 (b) to read as follows:
 

(b) The fire extinguishing system, the quantity of extinguishing agent, and the rate of discharge shall be such as to provide two adequate discharges. It shall be possible to direct both discharges to any main engine installation. Individual "one-shot" systems shall be acceptable in the case of auxiliary power units, fuel-burning heaters, and other combustion equipment.

### Amdt. 41-9----- Effective Sept. 26, 1947

The purpose of this amendment is to require that any gradient of the take-off surface, regardless of how small, be taken into account when computing the take-off limitations for airplanes certificated under the transport category.

Section 41.271 (c) of the Civil Air Regulations now requires that in applying take-off requirements to these aircraft a correction shall be made for any appreciable gradient of the take-off surface. Since the word "appreciable" has no defined limits, this may under certain conditions constitute a hazard to safety in that the gradient may not always be taken into consideration when establishing take-off limitations.

§ 41.271 (c) of the Civil Air Regulations is amended by striking the word "appreciable" from the first sentence thereof.

### Amdt. 41-10----- Effective Sept. 12, 1947

Civil Air Regulations Amendment 41-5 pertaining to scheduled air carrier operation, adopted by the Board March 14, 1947, provided that effective September 15, 1947, each flight engineer shall hold a valid flight-engineer certificate issued in accordance with the provisions of Part 35.

It now appears that the Civil Aeronautics Administration examination program for certifying flight engineers was not fully effective until about September 1, 1947, due to the necessity for qualifying personnel and preparing examinations for certain new aircraft of a transport type requiring flight engineers which have just recently been introduced. Thus, the present effective date of the amendment does not allow sufficient time for the certification of all flight engineers where now required.

The following amendment is, therefore, intended to extend the time by which flight engineers are required to be certificated until November 15, 1947, on which date the Board has already made effective the requirement that flight radio operators and flight navigators be certificated.

§ 41.321 of the Civil Air Regulations is amended by striking the words "September 15, 1947" and substituting therefor the words "November 15, 1947."

### Amdt. 41-11----- Effective Oct. 16, 1947

The regulation requiring the carriage of flight recorders in scheduled air carrier operation was repealed on June 9, 1944, because of material shortages.

Since the use of flight recorders by scheduled air carriers in both passenger and cargo service will promote safety and will constitute an aid in the determination of the facts, conditions, and circumstances of accidents in which such aircraft may become involved and also since flight recorders are now available, it is considered in the public interest to require their use.

Part 41 of the Civil Air Regulations is amended by adding a new section to read as follows:

**41.24 Flight recorder.** No aircraft shall be operated in scheduled air transportation after June 30, 1948, unless it is equipped with instrumentation to record continuously during flight the altitude of the aircraft and the vertical accelerations to which the aircraft may be subjected, the values of both these items to be recorded against a time scale of at least 2 inches to the hour. The recording device shall be substantially protected from jarring and from the effects of fire and shall be located as far back in the fuselage as practicable, in any case at least aft of the most rearward bulkhead.

### Amdt. 41-12----- Effective Oct. 16, 1947

The purpose of this amendment is to specify the minimum recent experience that flight radio operators, flight engineers, and flight navigation must have before serving in air carrier operations.

The amendment is necessary to insure that United States air-men, when accepted for duty, will meet the level of proficiency established by the International Civil Aviation Organization, and to further insure that this level will be maintained.

Part 41 of the Civil Air Regulations is amended as follows:

1. By adding a new § 41.314 to read as follows:

**41.314 Qualification for duty.** A certificated flight radio operator shall not be assigned to nor perform duties for which he is required to be certificated unless, within the preceding 12-month period, he has had at least 4 months of satisfactory experience as a radiotelegraph operator and 25 hours of experience in the operation of aircraft radio during flight; or until the air carrier has checked the airman and has determined that he is (1) familiar with all current radio information pertaining to the routes to be flown and (2) competent with respect to the operating procedures and radio equipment to be used.

2. By amending § 41.322 to read as follows:

**41.322 Qualification for duty.** A certificated flight engineer shall not be assigned to nor perform duties for which he is required to be certificated unless, within the preceding 12-month period, he has had at least 50 hours of experience as a flight engineer on the make and model aircraft on which he is to serve; or until the air carrier has checked the airman and determined that he is (1) familiar with all current information and operating procedures relating to the make and model aircraft to which he is to be assigned and (2) competent with respect to such aircraft.

3. By adding a new § 41.332 to read as follows:

**41.332 Qualification for duty.** A certificated flight navigator shall not be assigned to nor perform duties for which he is required to be certificated unless, within the preceding 12-month period, he has had at least 50 hours' experience as a flight navigator; or until the air carrier has checked the airman and determined that he is (1) familiar with all current navigational information pertaining to the routes to be flown and (2) competent with respect to the operating procedures and navigational equipment to be used.

### Amdt. 42-6----- Effective Oct. 16, 1947

The maintenance and inspection systems required by Part 61 insure the continued airworthiness of scheduled air-carrier aircraft at least as effectively as the annual or periodic inspection requirements of Part 42 insure the airworthiness of nonscheduled air-carrier aircraft.

The purpose of this regulation is to specifically exempt nonscheduled air-carrier aircraft from the periodic and annual inspection requirements of Part 42, provided that such aircraft are maintained and inspected in a manner equivalent to that of scheduled air-carrier aircraft which are governed by Part 61.

Part 42 of the Civil Air Regulations is amended as follows:

1. By amending § 42.150 to read as follows:

**42.150 Inspections.**

(a) Aircraft shall be given an annual inspection within each 12 calendar months.

(b) Aircraft shall be given a periodic inspection within each 100 hours of flight time. The annual inspection required in (a) will be accepted as one such periodic inspection.

(c) Aircraft maintained and inspected in accordance with a continuous maintenance and inspection system in a manner provided for by Part 41 or 61 and approved by the Administrator and authorized by the terms of the air carrier operating certificate are exempted from the requirements of (a) and (b) above.

### Amdt. 43-10----- Effective Oct. 16, 1947

The maintenance and inspection systems required by Parts 41 and 61 of the Civil Air Regulations insure the continued airworthiness of air carrier aircraft at least as effectively as the annual or periodic inspections required by the general operation rules of Part 43.

The purpose of this regulation is to specifically exempt from the periodic and annual inspection requirements of § 43.22 those air carrier aircraft which are maintained and inspected in accordance with Parts 41 or 61.

Part 43 of the Civil Air Regulations is amended as follows:

1. By amending § 43.22 to read as follows:

**43.22 Inspections.**

(a) **Annual inspection.** An aircraft shall not be flown, except for airworthiness flight tests, unless within the preceding 12 calendar months it has been given an annual inspection as prescribed by the Administrator and has been found to be airworthy by a person designated by the Administrator.

(b) **Periodic inspection.** An aircraft shall not be flown for hire, unless within the preceding 100 hours of flight time it has been given a periodic inspection by an appropriately rated mechanic in accordance with the periodic inspection report form prescribed by the Administrator, has been found to be airworthy, and a notation to that effect has been entered by such mechanic in the aircraft log. The annual inspection required by paragraph (a) will be accepted as one such periodic inspection.

(c) **Air carrier exemption.** Air carrier aircraft are exempted from (a) and (b) above when such aircraft are maintained and inspected in accordance with a continuous maintenance and inspection system as provided for by Part 41, 42, or 61.

### Amdt. 61-8----- Effective Sept. 26, 1947

The purpose of this amendment is to require that any gradient of the take-off surface, regardless of how small, be taken into account when computing the take-off limitations for airplanes certificated under the transport category.

Section 61.7122 (c) of the Civil Air Regulations now requires that in applying take-off requirements to these aircraft a correction shall be made for any appreciable gradient of the take-off surface. Since the word "appreciable" has no defined limits, this may under certain conditions constitute a hazard to safety in that the gradient may not always be taken into consideration when establishing take-off limitations.

Section 61.7122 (c) of the Civil Air Regulations is amended by striking the word "appreciable" from the first sentence thereof.

### Amdt. 61-9----- Effective Sept. 12, 1947

Civil Air Regulations amendment 61-4 pertaining to scheduled air carrier operation, adopted by the Board March 14, 1947, provided that effective September 15, 1947, each flight engineer shall hold a valid flight engineer certificate issued in accordance with the provisions of Part 35.

It now appears that the Civil Aeronautics Administration examination program for certifying flight engineers was not fully effective until about September 1, 1947, due to the necessity for qualifying personnel and preparing examinations for certain new aircraft of a transport type requiring flight engineers which have just recently been introduced. Thus, the present effective date of the amendment does not allow sufficient time for the certification of all flight engineers where now required.

The following amendment is, therefore, intended to extend the time by which flight engineers are required to be certificated until November 15, 1947, on which date the Board has already made effective the requirement that flight radio operators and flight navigators be certificated.

Section 61.560 of the Civil Air Regulations is amended by striking the words "September 15, 1947" and substituting therefor the words "November 15, 1947."

### Amdt. 61-10----- Effective Oct. 16, 1947

The purpose of this amendment is to specify the minimum recent experience that flight engineers must have before serving in air carrier operations.

This amendment will promote safety in air commerce by insuring that flight engineers, when accepted for duty in certificated interstate air carrier operations, will be adequately qualified to perform their duties and that such qualifications will be maintained.

Part 61 of the Civil Air Regulations is amended by adding a new § 61.561 to read as follows:

**61.561 Qualification for Duty.** A certificated flight engineer shall not be assigned to nor perform duties for which he is required to be certificated unless, within the preceding 12-month period, he has had at least 50 hours of experience as a flight engineer on the make and model aircraft on which he is to serve; or until the air carrier has checked the airman and determined that he is (1) familiar with all current information and operating procedures relating to the make and model aircraft to which he is to be assigned and (2) competent with respect to such aircraft.

### Amdt. 61-11----- Effective Oct. 16, 1947

The regulation requiring the carriage of flight recorders in scheduled air carrier operations was repealed on June 9, 1944, because of material shortages.

Since the use of flight recorders by scheduled air carriers in both passenger and cargo service will promote safety and will constitute an aid in the determination of the facts, conditions, and circumstances of accidents in which such aircraft may become involved and also since flight recorders are now available, it is considered in the public interest to require their use.

Part 61 of the Civil Air Regulations is amended by adding a new section to read as follows:

**61.341 Flight recorder.** No aircraft shall be operated in scheduled air transportation after June 30, 1948, unless it is equipped with instrumentation to record continuously during flight the altitude of the aircraft and the vertical accelerations to which the aircraft may be subjected, the values of both these items to be recorded against a time scale of at least 2 inches to the hour. The recording device shall be substantially protected from jarring and from the effects of fire and shall be located as



far back in the fuselage as practicable, in any case at least aft of the most rearward bulkhead.

## Airline Orders

E-764 allows the Postmaster General to intervene in the Southwest Airways Co., proceeding, docket 2861. (Aug. 18)

E-765 amends order E-335 which set a temporary mail rate for Florida Airways, Inc. (August 19)

E-766 denies application of West Central Airlines for an exemption from certain provisions of the Act so that they could engage in scheduled transportation of mail and property over a route between Amarillo, Tex., and Bismarck, N. Dak., via certain intermediate points. (August 20)

E-767 denies application of Monarch Air Lines for an exemption from certain provisions of the Act so that they could engage in scheduled transportation of persons, property and mail over a route between Gallup, N. Mex., and Phoenix, Ariz. (August 21)

E-768 permits Pan American Airways to intervene in the application of "Swissair" (Swiss Air Transport Co., Limited) for a foreign permit authorizing transportation between Switzerland and New York, via intermediate points in Eire and Newfoundland and the Azores and Newfoundland. (August 21)

E-769 temporarily exempts Northwest Airlines from certain provisions of the Act insofar as they would prevent Northwest from temporarily serving Eau Claire, Wis., on flights which serve Madison and La Crosse, Wis., or Rochester, Minn.; provides that exemption shall terminate when adequate airport facilities for serving either Green Bay or Wausau, Wis., become available. (August 22)

E-770 denies request of Pan American Airways for oral argument on its exceptions to the Tentative Decision in Docket 1499; denies petition of Pan Am for a temporary rate of compensation for mail transportation pending disposition of its exceptions to the Tentative Decision; overrules Pan Am's exceptions to the Tentative Decision; terminates stay of order E-681 and makes mail rate provided for in said order effective. (August 25)

E-771 denies Pan American's request for oral argument on its exceptions to the Tentative Decision in Docket 1706; denies its petition for fixing temporary rates of compensation for mail transportation pending disposition of Pan Am's exceptions to the Tentative Decision; overrules its exceptions to the Tentative Decision; terminates stay in order E-612 and makes mail rate provided for in said order effective. (August 25)

E-772 subject to certain provisions, approves agreement dated March 6, 1947, between Western Air Lines and United Air Lines; approves transfer to United Air Lines, of the certificate dated November 11, 1944, issued to Western Air Lines, pursuant to order No. 3263; provides that within 21 days of the date of this order, the amended certificate dated May 19, 1947, issued to UAL, pursuant to order E-556, shall be further amended to authorize UAL to engage in transportation of persons, property, and mail between the terminal point Los Angeles, Calif., and the coterminal points New York and Newark, N. J., via certain intermediate points; and (a) beyond Toledo, Ohio, via certain intermediate points and the terminal point Boston, Mass.; and (b) beyond Toledo, Ohio, the terminal point Washington, D. C.; the amended certificate is subject to a restriction prohibiting UAL from engaging in local transportation between Los Angeles and Las Vegas, Nev. (Issued with an opinion—August 25)

E-773 rescinds order 2674, dated February 7, 1944, insofar as it pertains to withholding from public disclosure an agreement—CAB-FG No. 47, filed with the Board on January 1, 1944, by Pan American Airways. (August 26)

E-774 postpones action on motion of Piedmont Aviation for issuance of a certificate. (August 27)

E-775 grants Empresa de Transportes Aerovias Brasil, S. A., a foreign air carrier permit authorizing transportation of persons, property, and mail, in both directions, between the U. S. of Brazil and the coterminal points Miami, Fla., and New Orleans, La., via certain intermediate points. (Issued with an opinion—August 21)

E-776 denies motion of Transcontinental & Western Air to dismiss motion of Western Air Lines to consolidate the latter's petition, Docket 3045, in the Additional California-Nevada Service Case. (August 28)

E-777 orders that the petition of Western Air Lines be consolidated into the Additional California-Nevada Service Case. (August 28)

E-778 temporarily exempts Pan American Airways from certain provisions of the Act, and from the terms, conditions, and limitations of its certificates, insofar as they would prevent Pan Am from serving Lisbon as an intermediate point between the Azores and Dakar for 90 days after the date of this order on its route between New York and Union of South Africa, provided that the period of such exemption may be extended by the Board if the traffic demands of Lisbon are sufficient to justify service to Lisbon; suspending service on its route between New York and Lisbon, via certain intermediate points; serving Gander Airport, Newfoundland, and/or Shannon Airport, Eire, in lieu of the Azores on flights serving New York and Lisbon; dismisses petition of Colonial Airlines for leave to intervene in the proceeding. (August 19)

E-779 consolidates applications and permits interventions in the "Skyruiase" Case—Docket 2377 et al. (August 29)

E-780 dismisses proceeding re joint application of Transcontinental & Western Air and Chicago & Southern Air Lines for approval by the Board of an agreement relating to the interchange of equipment. (August 28)

E-781 permits British Commonwealth Pacific Airlines, Ltd., to serve San Francisco, Calif., through the use of the Municipal Airport, effective September 1, 1947. (August 29)

E-782 approves, subject to a condition, Agreements C. A. B. Nos. 735 and 739, by and between certain airlines, relating to the establishment and operation of an Airlines Negotiating Conference. (Issued with an opinion—August 26)

E-783 selects two feeder lines, authorizes a new experimental intra-city helicopter service and amends the certificates of four presently scheduled air carriers so that additional cities in the Great Lakes Area will receive air service—Docket 535 et al. (See story on page 110.) (Issued with an opinion—September 3.)

E-784 denies petition of Eastern Air Lines requesting that the Board grant further hearing in the Boston-New York-Atlanta-New Orleans Case. (September 8)

E-785 denies petitions of Eastern Air Lines and Delta Air Lines for reconsideration of notices of Pennsylvania-Central Airlines, filed pursuant to sec. 238.3 of the Economic Regulations, for nonstop service between points on route 51. (September 10)

## Air Regulations . on October 1, 1947

TITLE	No.	PART			MANUAL		
		Price	Date	No. of Amendments	Price	Date	No. of Amendments
Aircraft							
Airworthiness Certificates.....	01	\$0.05	10/15/42	3	None	None	
Type and Production Certificates.....	02	.05	7/1/46	1	\$0.10	8/1/46	
Airplane Airworthiness—Normal, Utility, Acrobatic, and Restricted Purpose Categories.....	103	.25	12/15/46	2	None	None	
Airplane Airworthiness.....	04a	.15	11/1/43	8	.45	7/1/44	
Airplane Airworthiness Transport Categories.....	104b	Free	11/9/43	7	None	None	
Rotorcraft Airworthiness.....	06	.10	5/24/46	1	None	None	
Aircraft Airworthiness, Limited Category.....	09	.05	11/21/46	1	None	None	
Engine Airworthiness.....	13	.05	8/1/41	1	None	None	
Propeller Airworthiness.....	14	.05	7/15/42	1	.15	5/1/46	
Equipment Airworthiness.....	15	.05	5/31/46	1	No stock	7/1/38	
Radio Equipment Airworthiness.....	16	.05	2/13/41	1	Free	2/13/41	
Maintenance, Repair, and Alteration of Aircraft, Engines, Propellers, Instruments.....	18	.05	9/1/42	1	.50	6/1/43	
Airmen							
Pilot Certificates.....	20	.05	7/1/45	7	None	None	
Lighter-than-air Pilot Certificates.....	21	.05	10/1/42	4	None	None	
Mechanic Certificates.....	22	.05	10/15/42	2	None	None	
Parachute Technician Certificates.....	23	.05	7/1/43	12	None	None	
Aircraft Dispatcher Certificates.....	25	.05	12/15/43	4	None	None	
Traffic Control Tower Operator Certificates.....	26	.05	10/10/45	2	None	None	
Physical Standards for Airmen.....	27	.05	7/1/46	1	None	None	
Flight Radio Operator Certificates.....	29	.05	1/10/46	1	None	None	
Flight Navigator Certificates.....	33	.05	8/1/47	1	None	None	
Flight Engineer Certificates.....	34	.05	8/1/47	1	None	None	
Flight Engineer Certificates.....	35	.05	3/15/47	1	None	None	
Operation Rules							
Air Carrier Operating Certification.....	40	.10	7/10/46	11	None	None	
Scheduled Air Carrier Operations Outside Continental United States.....	41	.05	5/1/46	12	None	None	
Non-scheduled Air Carrier Certification and Operation Rules.....	42	.05	8/1/46	16	.15	11/1/46	
General Operation Rules.....	43	.05	7/1/45	10	None	None	
Foreign Air Carrier Regulations.....	44	.05	7/1/45	1	None	None	
Operation of Moored Balloons.....	48	.05	9/28/47	1	None	None	
Transportation of Explosives and other Dangerous Articles.....	49	.05	7/1/45	1	None	None	
Air Agencies							
Airman Agency Certificates.....	50	.05	4/30/46	2	.15	5/15/46	
Ground Instructor Rating.....	51	.05	12/15/43	1	None	None	
Repair Station Rating.....	52	.05	10/1/42	1	Free	2/41	
Mechanic School Rating.....	53	.05	8/1/42	1	Free	5/40	
Parachute Loft Certificates and Ratings.....	54	.05	1/21/43	1	None	None	
Air Navigation							
Air Traffic Rules.....	60	.10	10/8/47	611	.15	10/45	
Scheduled Air Carrier Rules.....	61	.10	8/1/46	611	None	None	
Miscellaneous							
Rules of Practice Governing Suspension and Revocation Proceedings.....	97	Free	1/1/47	1	None	None	
Definitions.....	98	No stock	10/15/42	1	None	None	
Mode of Citation.....	99	Free	11/15/40	1	None	None	
Regulations of the Administrator							
Aircraft Registration Certificates.....	501	Free	5/1/47	1	None	None	
Dealers Registration Certificates.....	502	Free	5/1/47	1	None	None	
Recordation of Aircraft Ownership.....	503	Free	5/1/47	1	None	None	
Notice of Construction or Alteration of Structures on or near Civil Airways.....	525	Free	7/23/43	1	None	None	
Seizure of Aircraft.....	531	Free	12/8/41	1	None	None	
Reproduction and Dissemination of Current Examination Materials.....	532	Free	1/15/43	1	None	None	
Federal Aid to Public Agencies for Development of Public Airports.....	550	Free	1/9/47	1	None	None	
Acquisition by Public Agencies for Public Airport Purposes of Land Owned or Controlled by the United States.....	555	Free	1/9/47	1	None	None	
Claims for Reimbursement for Rehabilitation or Repair of Public Airports Damaged by Federal Agencies.....	560	Free	1/9/47	1	None	None	

<sup>1</sup> Certain aircraft may comply with the provisions of this part or part 04a.

<sup>2</sup> Special regulations 340 and 340C.

<sup>3</sup> Special regulations 361A, 361C.

<sup>4</sup> Special regulations 385, 390, 397, and 397A.

<sup>5</sup> 43-1, 43-3, 43-5 are obsolete.

<sup>6</sup> Special regulations 361A, 361C, 385, 390, 397 and 397A.

NOTE: Those parts and manuals for which there is a price are

obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Remittances should be by check or money order, payable to the Superintendent. Currency is sent at sender's risk. Amendments and free Parts are obtained from the Publications Section, Civil Aeronautics Board, Washington 25, D. C.; free Manuals and Regulations of the Administrator from the CAA Office of Aviation Information, Dept. of Commerce, Washington 25, D. C.

E-786 modifies order E-772, which approved an agreement between Western Air Lines and United Air Lines and the transfer to UAL of WAL's certificate, by substituting a new paragraph 4. (September 10)

E-787 permits the Cities of Cocoa and Perry, Fla., leave to intervene in the Additional Service to Florida Case—Docket 1668 et al. (September 1)

E-788 permits the Cities of Prescott and Kingman, Ariz., leave to intervene in the Arizona-New Mexico Case—Docket 968 et al. (September 10)

E-789 consolidates the application of Amphibian Air Transport, relative to air transportation services in the general Los Angeles-Catalina Island area, into the Additional California-Nevada Service Case—Docket 2019 et al. (September 10)

E-790 denies petitions of Chambers of Commerce of Midland and Austin, Tex., for leave to intervene in the Arizona-New Mexico Case. (September 10)

E-791 orders reissuance of a foreign air carrier permit. Order E-305 issued a permit to Royal Dutch Air Lines (KLM) and the carrier has requested that the designation of the carrier in the permit be changed to K. L. M. Royal Dutch Airlines to conform with the translation of its name in most of the countries to which it renders service. (September 10)

E-792 orders that paragraph 3 of order E-772 be further amended. (September 11)

E-793 orders that effective September 15, 1947, the certificate for route 66 issued to Western Air Lines be cancelled; that the certificate for route 1 issued to United Air Lines be amended and shall be effective on September 15; that as of 12:01 a. m., Pacific Coast Standard Time, all authorizations by the Board then in effect to render scheduled nonstop service between points on route 68 and all authorizations by the Board then in effect to

(See Airline Orders, page 119)

# Scheduled Air Carrier Operations

Source: CAB Form 41

## Domestic Trunk Lines—July 1947

Operator	Revenue miles	Revenue passengers (unduplicated)	Revenue passenger-miles (000 omitted)	Express and freight (tons)	Ton-miles flown		Passenger seat-miles (000 omitted)	Revenue passenger load factor (percent)
					Express	Freight		
American Airlines, Inc.	5,607,899	252,588	128,704	2,438.0	364,686	840,844	200,119	64.31
Braniff Airways, Inc.	964,141	50,642	16,958	201.0	62,718	30,213	29,166	58.14
Chicago & Southern Air Lines, Inc.	625,620	23,661	9,410	195.0	49,887	25,481	17,318	54.34
Colonial Airlines, Inc.	366,660	14,617	3,928	27.7	6,524	0	7,207	54.50
Continental Air Lines, Inc.	504,818	16,942	5,708	40.0	7,954	0	10,406	54.85
Delta Air Lines, Inc.	1,060,041	42,876	16,027	188.0	44,838	45,565	29,301	54.70
Eastern Air Lines, Inc.	3,297,052	125,151	58,250	714.3	269,048	153,773	113,155	51.48
Inland Air Lines, Inc.	213,056	7,871	3,110	18.0	4,405	3,077	4,212	73.84
Mid-Continent Airlines, Inc.	660,458	24,940	7,561	59.0	12,532	6,023	13,334	56.70
National Airlines, Inc.	690,911	22,766	10,027	68.7	26,303	13,441	23,359	42.93
Northeast Airlines, Inc.	429,345	32,341	6,310	82.0	9,991	3,667	13,513	46.70
Northwest Airlines, Inc.	1,471,042	62,861	35,360	330.0	132,320	50,217	46,280	76.40
Pennsylvania-Central Airlines Corp.	1,520,962	98,063	25,325	972.0	138,295	179,002	51,301	49.37
Transcontinental & Western Air, Inc.	1,517,629	96,427	73,748	849.0	430,867	286,196	122,923	60.00
United Air Lines, Inc.	5,661,029	191,900	120,968	1,481.0	500,241	573,490	159,478	75.85
Western Air Lines, Inc.	711,354	40,061	17,501	147.0	31,083	29,571	26,302	66.54
Total	28,808,019	1,103,707	538,895	7,810.7	2,091,742	2,219,272	867,374	62.13

## Domestic Trunk Lines—January-July 1947

Operator	Revenue miles, January-July		Revenue passengers (unduplicated) January-July		Revenue passenger-miles (000) January-July		Express and freight (tons) January-July	
	1947	1946	1947	1946	1947	1946	1947	1946
American Airlines, Inc.	34,302,492	33,781,217	1,526,945	1,220,660	780,358	653,454	14,325.0	7,955.0
Braniff Airways, Inc.	6,321,819	6,207,471	326,813	274,426	111,264	113,677	1,376.0	910.2
Chicago & Southern Air Lines, Inc.	4,033,443	4,488,312	159,367	190,332	62,539	76,783	1,290.0	615.9
Colonial Airlines, Inc.	1,775,294	1,684,362	72,512	82,844	20,447	24,674	150.0	100.0
Continental Air Lines, Inc.	2,885,627	3,020,457	98,709	114,519	32,667	42,173	243.0	131.3
Delta Air Lines, Inc.	6,596,063	5,878,977	279,319	266,502	120,374	111,341	1,387.0	519.0
Eastern Air Lines, Inc.	25,703,717	21,927,208	948,286	796,369	512,593	410,294	5,172.7	2,785.0
Inland Air Lines, Inc.	1,267,298	1,163,512	46,098	44,822	15,579	12,397	86.1	39.8
Mid-Continent Airlines, Inc.	3,633,608	2,828,740	147,566	137,840	45,399	41,929	328.1	202.4
National Airlines, Inc.	5,722,279	4,948,163	188,371	151,314	99,993	89,610	676.0	226.4
Northeast Airlines, Inc.	2,319,123	2,056,442	185,500	207,966	35,290	42,272	464.1	205.4
Northwest Airlines, Inc.	10,019,158	9,889,424	371,102	317,526	197,221	195,088	2,147.3	982.7
Pennsylvania-Central Airlines Corp.	9,554,924	9,779,548	619,973	710,428	162,146	203,587	7,480.0	2,558.6
Transcontinental & Western Air, Inc.	26,798,854	25,323,862	551,580	545,157	431,930	474,925	6,278.0	5,679.0
United Air Lines, Inc.	33,064,081	30,407,608	1,055,066	911,070	652,605	565,980	10,522.0	4,550.4
Western Air Lines, Inc.	4,466,174	4,593,372	265,643	246,929	105,347	95,697	1,201.9	663.6
Total	178,163,954	167,978,675	6,842,850	6,218,704	3,385,752	3,153,881	53,127.2	28,124.7
Index (1946=100)	106.24	100.00	110.04	100.00	107.35	100.00	189.06	100.00

Operator	Ton-miles flown				Passenger seat-miles (000), January-July		Revenue passenger load factor (percent), January-July	
	Express, January-July		Freight, January-July		1947	1946	1947	1946
	1947	1946	1947	1946	1947	1946	1947	1946
American Airlines, Inc.	2,721,030	2,280,813	4,608,337	2,077,646	1,114,719	761,888	70.00	85.77
Braniff Airways, Inc.	447,134	280,541	156,958	94,245	182,377	133,449	61.01	85.18
Chicago & Southern Air Lines, Inc.	362,180	228,043	153,550	106,640	106,640	100,838	58.61	76.14
Colonial Airlines, Inc.	31,211	24,134	0	0	34,911	34,148	38.57	72.20
Continental Air Lines, Inc.	47,935	35,238	58,067	17,186	59,463	62,869	54.94	67.08
Delta Air Lines, Inc.	388,744	250,931	306,194	8	188,147	145,714	63.98	76.41
Eastern Air Lines, Inc.	2,179,331	1,627,282	878,851	133,604	776,482	485,769	66.01	81.46
Inland Air Lines, Inc.	21,010	9,363	13,404	216	24,599	19,955	63.33	62.12
Mid-Continent Airlines, Inc.	79,116	71,991	31,949	0	73,160	55,037	62.05	76.18
National Airlines, Inc.	216,783	132,438	285,327	0	168,506	108,367	59.34	82.69
Northeast Airlines, Inc.	60,945	36,063	11,432	0	74,345	58,524	47.47	72.23
Northwest Airlines, Inc.	972,511	554,857	301,422	0	291,206	222,162	67.73	87.81
Pennsylvania-Central Airlines Corp.	1,265,019	583,977	1,076,290	608	317,255	268,671	51.11	75.78
Transcontinental & Western Air, Inc.	3,065,579	2,187,421	2,086,912	1,044,699	659,263	549,318	65.52	86.46
United Air Lines, Inc.	3,729,697	2,542,994	4,332,109	1,478,706	855,052	654,438	76.32	86.48
Western Air Lines, Inc.	258,344	184,916	235,421	56,366	167,445	120,904	62.91	79.15
Total	15,846,569	11,031,002	14,536,243	4,903,276	5,093,570	3,782,051	66.48	83.39
Index (1946=100)	143.65	100.00	296.46	100.00	134.68	100.00	79.72	100.00

Passenger-miles flown (total revenue and nonrevenue, in thousands): January—288,289; February—380,606; March—503,466; April—535,254; May—574,303; June—556,562; July—559,507; Total 3,497,987.

## Domestic Territorial Lines—July 1947

Operator	Revenue miles	Revenue passengers	Revenue passenger-miles (000)	Express and freight (tons)	Ton-miles flown		Passenger-seat miles (000)	Revenue passenger load factor (percent)
					Express	Freight		
Caribbean-Atlantic Airlines, Inc.	33,521	5,822	358	9.2	0	695	805	44.47
Hawaiian Airlines, Ltd.	252,042	30,860	4,340	520.0	8,171	70,883	5,385	80.59
Total	285,563	36,682	4,698	529.2	8,171	71,578	6,190	75.90

# Scheduled Air Carrier Operations—cont'd

## International and Overseas Air Carriers—June 1947

Operator	Revenue miles	Revenue passengers	Revenue passenger-miles (000)	Express and freight (tons)	Ton-miles flown		Passenger-seat miles (000)	Revenue passenger load factor (percent)
					Express	Freight		
American Airlines, Inc.	223,043	6,016	4,880	152.0	0	100,623	8,750	55.77
American Overseas Airlines, Inc.	827,297	8,651	24,762	55.7	187,854	0	28,534	86.78
Chicago & Southern Air Lines, Inc.	41,100	764	523	14.0	0	9,329	1,850	28.27
Eastern Air Lines, Inc.	60,180	1,687	1,689	7.1	0	9,506	3,009	56.13
National Airlines, Inc.	34,680	2,482	774	17.0	5,604	0	1,595	48.53
Northwest Airlines, Inc.	148,212	1,448	2,419	19.4	6,107	24,694	5,456	44.34
Pan American Airways, Inc.:								
Atlantic Division	1,139,182	13,919	33,808	88.7	396,246	0	43,019	78.59
Latin American Division	2,493,631	57,596	55,184	916.0	1,321,363	0	100,392	54.97
Alaska Operations	194,008	4,516	4,431	34.0	38,173	0	8,398	52.76
Pacific Operations	975,826	6,132	19,225	74.0	305,050	0	28,442	67.59
Pan American-Grace Airways, Inc.	476,742	8,423	7,908	175.0	138,676	0	13,455	58.77
Transcontinental & Western Air, Inc.	804,523	6,655	22,093	64.0	301,146	0	25,581	86.36
United Air Lines, Inc.	160,800	2,552	6,125	3.0	7,263	0	6,662	91.94
Uruba, Medellin & Central Airways, Inc.	20,192	454	119	13.0	4,101	0	384	30.99
Total	7,599,416	121,295	183,940	1,632.9	2,711,883	144,152	275,527	66.76

## Domestic Feeder Lines—July 1947

Operator	Revenue miles	Revenue passengers	Revenue passenger-miles (000)	Express and freight (tons)	Ton-miles flown		Passenger-seat miles (000)	Revenue passenger load factor (percent)
					Express	Freight		
All American Aviation, Inc.	158,608	0	0	22.2	3,514	0	0	—
Challenger Airlines Co.	78,360	1,387	348	3.3	845	85	1,646	21.14
Empire Air Lines, Inc.	83,795	1,617	335	3.0	746	0	840	39.88
Florida Airways, Inc.	62,999	502	62	2.2	234	0	504	12.30
Monarch Air Lines, Inc.	115,570	1,745	384	29.0	838	6,598	1,928	19.92
Pioneer Air Lines, Inc.	208,761	5,858	1,568	6.0	1,782	0	5,018	31.25
Southwest Airways, Co.	191,623	10,361	1,865	27.0	3,778	380	3,961	47.08
West Coast Airlines, Inc.	69,160	5,026	575	4.4	649	0	1,483	38.77
Total	968,876	26,496	5,137	97.1	12,386	7,063	15,380	33.40

## CAA and CAB Releases

Copies of CAA releases may be obtained from the CAA Office of Aviation Information. CAB releases are obtainable from the Public Information Section of the Board. Both offices are located in the Department of Commerce Building, Washington 25, D. C.

### Administration

Changes in Airman's Guide Announced by CAA. (August 18)  
 Survey Flights Scheduled for Cross-country Skyway. (August 25)  
 Kay Named as Assistant for Aeronautical Charts. (August 25)  
 CAA Supplies Remote Alaskan Stations by Air. (August 29)  
 New Air Rules will Affect all Pilots. (August 29)  
 Airline Planes Increase, CAA Monthly Report Shows. (September 1)  
 Pilots under Violation Charges Affected by New Ruling. (September 8)  
 Gainesville is on the Air Map; It has a Flying Mayor. (September 10)  
 Five Airlines Begin Use of CAA ILS at 30 Cities. (September 15)  
 Address by John R. Alison on Skyway One. (September 12)  
 Fly Seaplanes Quietly, CAA Administrator Asks. (September 20)  
 CAA Invites Industry to Discuss Runway Length and Strength Limits. (September 17)  
 CAA Issues Rules for Operating Moored Balloons. (September 22)  
 Uncle Sam's only Commercial Airport Now Self-supporting. (September 23)  
 Air Education in U. S. Growing, CAA Reports. (September 23)  
 "Air Traffic Control"—Conference paper by Charles W. Carmody, CAA Air Traffic Control Division, September 25, before American Institute of Electrical Engineers. (September 25)

CAA Takes Over Operation of Aids on Pacific Islands. (September 24)

### Board

CAB Decision Approves Transfer of Route 68 from Western to United Air Lines. (August 26)  
 CAB Issues Foreign Air Carrier Permit to Empresa de Transportes Aerovias Brasil, S. A. (August 27)  
 Mileage and Traffic Statistics for June. (August 4)  
 Great Lakes Area Regional Air Service Case. (September 8)  
 CAB Grants Foreign Air Carrier Permit to China National Aviation Corp. (September 24)

## Airline Orders

(Continued from page 117)

serve regularly any point on route 68 through an airport convenient thereto shall be deemed to be transferred to United Air Lines. (September 11)  
 E-794 temporarily exempts West Coast Airlines from the provisions of 401 (a) of the Act, insofar as they would prevent West Coast from serving Chehalis, Wash., on one southbound flight daily from Seattle to Portland over segment 3 of route 77. (September 12)  
 E-795 approves resolutions of the Sixth Meeting of the North Atlantic Traffic Conference of the IATA relating to rates and miscellaneous matters. (September 10)  
 E-796 permits Empresa de Transportes Aerovias Brasil, S. A., to serve Miami, Fla., immediately, through the use of Miami International Airport. (September 12)  
 E-797 dismisses applications of Chicago Helicopter Air Transport, Docket 2905, and Wisconsin Central Airlines, Docket 2920, in the Chicago Helicopter Service proceeding. (September 12)  
 E-798 authorizes Uruba, Medellin and Central Airways to suspend service temporarily at Turbo, Colombia. (September 15)  
 E-799 authorizes Western Air Lines to temporarily suspend service at Jackson, Wyo., on route 19 from September 16, 1947, to June 15, 1948, inclusive. (September 16)

### Airman Orders

S-106 terminates the proceeding concerning David H. Jenkins. (August 21)  
 S-107 denies petition of John C. Green, Jr., holder of a commercial certificate with flight instructor, airplane single and multi-engine land ratings, for a rehearing, reargument and reconsideration, and his application for a stay order. (August 22)  
 S-108 denies petition of Charles T. Raines for rehearing. (September 2)  
 S-109 suspends for 60 days, commercial certificate of Brooks Ferrell for operating an aircraft so as to endanger the life and property of another. (September 10)

SD-392 suspends for 4 months, student certificate of Conway A. Anderson because he flew at approximately 40 feet above treetop level over a residential area of the City of Wauwatosa, Wis. (July 31)

SD-393 suspends for 90 days, commercial certificate with airplane single engine land 0-350 hp and flight instructor ratings of Roland A. Wardell because he piloted an aircraft in the vicinity of Hillsboro Municipal Airport, Hillsboro, Oreg., while carrying a passenger, when his airman ratings did not provide for such operation, in violation of section 43.63 or the Civil Air Regulations and section 610 (a) of the Civil Aeronautics Act. (July 29)

SD-394 revokes student certificate of Melvin J. Ives for low flying over a congested area in the vicinity of Los Angeles, Calif.; previously Ives had surrendered his certificate to the Gardens justice court to be held for 1 year as a result of his conviction of violating the California Air Navigation Act. (July 31)

SD-395 suspends for 6 months, student certificate of Wilbur E. Morgan because he flew at less than 500 feet over Bollinger Field, Charleston, W. Va. (June 30)

SD-396 suspends for 6 months, student certificate of George J. Chaconas because he flew from Congressional Airport, Rockville, Md., to the vicinity of and over Washington, D. C., thereby flying outside a local flying area designated by his flight instructor, when he did not have at least 10 solo flight hours; on this flight he flew at an altitude of less than 1,000 feet. (June 25)

SD-397 revokes airman certificate of Howard L. Graves because he piloted an aircraft at the Chemung County Airport, Elmira, N. Y., towing gliders when no authority for such operation had been issued to him. (July 10)

SD-398 revokes mechanic certificate of George J. MacDonald because he performed and supervised major engine repairs when he was not the holder of an engine rating to his mechanic certificate. (July 31)

SD-399 suspends for 6 months, private certificate of Charles V. Day for low flying over a congested area of Kansas City, Mo. (August 7)

SD-400 revokes student certificate of James J. Davis because he carried a passenger in a flight near Hastings, Nehr. (August 7)

SD-401 suspends for 6 months, student certificate of Refugio H. Garza for low flying and piloting an aircraft beyond the local flying area designated by his instructor, when he did not have 10 solo flight hours and had not passed a written exam on the Regulations. (June 11)

SD-402 suspends for 6 months, student certificate of Frederick L. Lippert for low flying in the vicinity of East Aurora, N. Y. (June 27)

SD-403 revokes private certificate of Richard B. Harrison because he piloted a civil aircraft for hire and endorsed student certificates for cross-country flight when he was not a properly rated flight instructor. (August 14)

SD-404 dismisses Administrator's complaint re John de Hondt, the holder of a student certificate. (August 13)

SD-405 revokes student certificate of Joe R. Wilson for low flying in the vicinity of Derita, N. C. (August 13)

SD-406 revokes student certificate of Wm. C. Brown for low flying in the vicinity of Joppa, Ala., and piloting an aircraft outside the area designed by his flight instructor. (August 14)

SD-407 suspends for 60 days, commercial certificate of M. H. Stewart because he piloted an aircraft in a control area and an airport traffic zone in the vicinity of Atlanta, Ga., during instrument weather without filing a flight plan. (August 14)



## Quiet, Careful Flying Near Water Resorts Urged by Wright

Unnecessary noise and utter disregard for others engaged in water sports and fishing will make the seaplane an unwelcome visitor at water resorts all over the country, and owners of such planes should protect their interests by careful and considerate flying, T. P. Wright, Administrator of Civil Aeronautics, warns seaplane pilots.

"Otherwise," said Mr. Wright, "there may be an epidemic of local ordinances and state legislation restricting and even forbidding seaplane operations in resort areas. The CAA has no control over such ordinances and regulations, and can in no way prohibit their enactment."

**Want Peace and Quiet.**—In discussing complaints which the CAA has received from lakeside residents and vacationists, Mr. Wright pointed out that people usually seek waterside vacation spots because they are quiet. "Thus any noise, however small, is more noticeable. Second, the airplane, which is comparatively new to such surroundings, often receives more than its share of attention and criticism. Third, the seaplane floats or hull, as the case may be, serve as a highly efficient sounding board and this, coupled with the unrestricted movement of sound waves over the water, appears to increase the volume of engine exhaust noises.

"There is a fourth point which is entirely true, but which brings little or no comfort to the seaplane pilot. His plane makes no more noise than many outboard motors, and makes that noise for shorter periods of time. He is up and away at speeds of 90 miles an hour or more, while the outboard snarls and whines within earshot for an hour at a time. The outboard, however, is no excuse for an airplane's unpleasant noise.

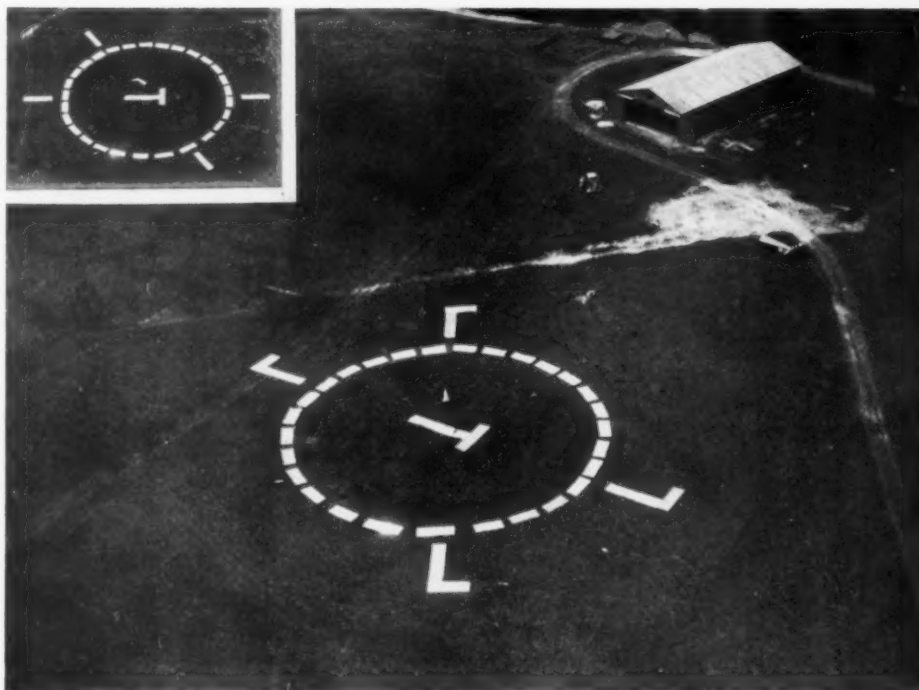
**Suggested Measures.**—"The remedy is a quiet plane, and that is not immediately in prospect. Meanwhile, we must make all the corrections possible by adjusting our methods of operation. CAA pilots experienced in seaplane operation make the following suggestions: Take off as far out from the shore as possible; cut the take-off run as short as safety permits; fly high enough to avoid criticism from residents below, or arrange the flight plan so that you pass over as few houses as possible; avoid unnecessary 'gunning' or racing of the engine; and explain carefully to those who complain what you are doing to make your airplane a good neighbor."

## Segmented Circle Charts

A chart of schematic diagrams of the segmented circle marker, with appropriate indications as to installation, use, etc., has been prepared by the CAA for distribution to those interested. Requests for the chart, which is free, should be addressed to the Office of Aviation Information, CAA, Commerce Department, Washington 25, D. C.

The chart gives suggested dimensions for the various panels of the marker, shows the location of the wind direction indicator and the landing direction indicator, and illustrates the method of placing the landing strip indicators. In addition, the chart shows the marker arrangement for indicating a closed field and a field in which both right and left traffic patterns are in use. A final illustration shows how the segmented circle marker can be utilized to set up traffic patterns, under various wind conditions, which will avoid hazards and populated areas in the immediate vicinity of an airport.

## Segmented Circle Markers to Aid Pilots Landing at Strange Fields



Segmented circle marker indicating right-hand traffic pattern when take-offs and landings are toward the top of the photograph; left-hand pattern for take-offs and landings toward the bottom. With direction T in the position shown, a left-hand pattern would be in use. Wind cone surmounts the T. Inset: Normal field pattern, indicating left turns from all runways.

Landing an airplane at a strange field will be easier and safer with a new airport marker system developed by the Civil Aeronautics Administration, T. P. Wright, Administrator, points out.

The "segmented circle" markers will be installed at all airports constructed under the Federal Airport Act, and at all airports with right-hand traffic patterns. Other airports will be urged to install the markers as an aid to visiting pilots.

**Tells Port Conditions.**—With the markers installed, pilots visiting a strange airport will be able to tell from the air the directions of the runways, and which runway is currently in use. Any unusual traffic patterns at the airport, or the fact that the airport is closed, will be evident at a glance.

Basic element of the markers will be a circle 100 or more feet in diameter made of panels 6 to 12 feet in length and 4 feet wide, separated by about one-fourth of the length of each panel. This segmented circle will be clearly visible from several thousand feet, and make it easy to locate the airport.

The landing direction T, tetrahedron, or arrow will be in the middle of the circle, with the wind cone on top. This will make it unnecessary to fly repeatedly around a strange field in search of the wind-direction indicator, and will avoid confusion about which runway is in use.

At fields where the landing strips are not self-evident, radiating panels outside the circle will show the location of the runways. A closed field will be indicated by panels in the center of the circle forming a cross at least 20 feet in diameter.

A left-hand traffic pattern is standard in the United States, but a few fields use a right-hand pattern to meet local conditions when taking off or landing in certain directions. This has led to confusion on the

part of visiting pilots, and some increase in collision hazard at these fields.

**"Must" for Right-hand Patterns.**—After October 8, all fields using right-hand patterns at any time must have segmented circle markers installed with right-hand traffic pattern indicators in place. These consist of panels added to the landing strip indicators at right angles, forming an L. In landing or taking off from the runway indicated, the pilot will always "fly with" the L, making his turns in the directions indicated by the arms of the L.

Right-hand patterns from certain runways enable pilots to avoid obstructions and special hazards near the airport, and also make it possible to reduce the noise nuisance over congested residential areas in the vicinity of the airport. Permission for such special patterns must be obtained from the CAA Regional Administrator.

The segmented circle may be constructed of any durable, weatherproof material. The estimated cost of such markers ranges from \$100 upward, depending on the permanence of the installation. CAA experiments have shown that panels laid flat on the ground are clearly visible from directly overhead, but are hard to see from a distance. Better visibility is obtained by using a double panel erected like an inverted V. Such markers are partially self-cleaning, can be seen for several miles laterally, and tend to remain free of snow and mud.

Any color may be used for the segmented circle marker, provided it gives efficient contrast with the surrounding area. White shows up well against most backgrounds, but fades out in snow and bright sandy areas. In some localities, alternate panels of white and chrome yellow will be visible under year-round conditions.

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